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AND HOROLOGICAL REVIEW.

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VOLUME XIX.

NEW YORK, FEBRUARY, 1888.

No. 1.

THE JEWELERS' CIRCULAR

AND

HOROLOGICAL REVIEW.

OFFICIAL REPRESENTATIVE OF THE JEWELERS' LEAGUE, THE NEW YORK JEWELERS' BOARD OF TRADE, AND THE JEWELERS' SECURITY ALLIANCE.

It is also the Recognized Exponent of Trade Interests.

A MONTHLY JOURNAL DEVOTED TO THE INTERESTS OF WATCHMAKERS, JEWELERS, SILVERSMITHS, ELECTRO-PLATE MANUFACTURERS, AND THOSE ENGAGED IN THE KINDRED BRANCHES OF ART INDUSTRY.

SUBSCRIPTION.—To all parts of the United States and Canada, \$2.00 per Annum, Postage Paid. To all Foreign Countries, \$3.00 per Annum, Prepaid.

All communications should be addressed to

SETH W. HALE, PRES'T,
THE JEWELERS' CIRCULAR PUBLISHING CO.,
189 BROADWAY, NEW YORK.

Advertising rates made known on application.



A full Index to Advertisements and Table of Contents will be found on Page 5 of this issue.

THE binder we have had made to hold the monogram sheets which we are printing with each issue, gives entire satisfaction to those who have ordered it. They say that it enables them to file away each sheet in a convenient manner, so that it is to all intents and purposes a bound book, to which they can add the pages from month to month as they appear. In fact, when all the monograms are printed, they will make a large and handsome volume that will be simply invaluable to all who have initial engraving to do. The binder will be sent to any address on receipt of its cost, \$1.25.

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A COMPANY has been formed, of which the Hon. Carl Schurz is President, for the purpose of publishing the *U. S. Export Almanack*, containing a series of articles descriptive of the industries of this country. The Secretary of State has consented to have 20,000 copies of the *Almanack* distributed in foreign countries by the United States consuls, thus giving the widest publicity to the facts contained in it. The articles will be printed in four languages, and will be prepared by well known writers and statisticians. The undertaking seems to be well calculated to foster and develop our export trade and to open up new markets for our producers.

A LITTLE idea of the number of persons to be met in New York may be formed by the announcement that 28,000,000 persons crossed the Brooklyn Bridge last year in the cars, and nearly 3,000,000 walked over. The average number of those who cross by the cars every day is 90,000. The several ferries crossing to New Jersey carry even more persons every day, while the elevated and surface railroads carry more than either the bridge or the ferries. An estimate of 300,000 persons moving into and out of the city daily is none too high. If the city had credit for all those who live or do business regularly within the city limits, she would have a population of about 3,000,000. Perhaps some day we will annex Long Island and New Jersey and set up an independent republic of our own.

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THE infinite variety and elegance found in plated ware at the present time is something astonishing. Artistic designs are combined with superior workmanship and elaboration of detail that result in the production of goods that leave nothing to be desired so far as form, style and general appearance are concerned. There is scarcely anything made in fine metals that it is not reproduced or have their counterparts in plated ware. Articles of table service especially are made in exquisite patterns, while recent improvements in the plating processes render them lasting and almost indestructible. The plated ware made to-day by manufacturers of established reputations will last a lifetime without betraying the fact that the silver surface has a foundation of white metal. Articles of bric-à-brac in endless variety are now made in this metal, while utility and ornamentation find expression in thousands of articles, from match boxes to elaborate vases, lamp stands, etc.

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A POSITIVE necessity of the times are non-magnetic watches. When electricity is being introduced into most business houses, and also into dwellings, and made to subserve a great variety of purposes, every one runs the risk of having his watch disarranged by it. A slight current of electricity, which may reach the delicate mechanism of a watch all unknown to its wearer, is sufficient to destroy its reliability temporarily. Various means have been devised for demagnetizing a watch, but what watchmakers are striving for is a watch that will not permit itself to be magnetized. Nearly every manufacturer is now announcing that he has achieved this desideratum, and the probability is that all who make this statement have been more or less successful. We print in this issue an article by Mr. Giles, who has a non-magnetic device for watches, in which he explains how watches become magnetized and how to prevent this evil. We print the article for the reason that it has been highly commended by electrical experts, and because the subject is one full of interest to all who make or wear watches. Should any of our

readers take issue with the propositions laid down by Mr. Giles, we shall be glad to print their criticism. On a subject of so much importance we cannot have too much light.

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ACCORDING to the annual trade review published by R. G. Dun & Co., there were 200 less failures in the country in the last year than during the previous year, but the volume of liabilities increased from \$114,644,119 in 1886 to \$167,560,944 in 1887. The whole number of failures last year was 9,634 as against 9,834 in 1886. These numerous wrecks of mercantile enterprises are to be attributed to the lax manner in which the credit system in vogue is administered. When men with little or no capital, and without financial backing of any kind, can, with a few hundred dollars of ready money, obtain credit for thousands, it is not surprising that schemers and dishonest speculators take advantage of the opportunities offered them, obtain stocks of goods for which they never intend to pay, and after disposing of them as far as possible, go into insolvency, leaving their creditors to make the best of the shell of the nut from which they have extracted the kernel.

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THERE has been recently a very material advance in the price of copper and tin, and as these metals form the basis of plated ware, there is a possibility that there will necessarily be a slight advance made before long in the price of such goods. One of the causes for the advance in copper is the fire that has been raging for months in the Heckla and Calumet mines in Michigan. Every effort to subdue the fire has failed, and the mines were closely sealed up several weeks ago, thus shutting off the possibility of work being resumed for a long time to come. When the fire has burned itself out, it is expected that all the timbering of the mine will have been destroyed, and that the work will have to be done over at an immense cost and loss of time. As a consequence, these mines are not likely to contribute much, if anything, to the supply of copper during the present year, and the withdrawal of their large product will tend to keep up the price. Professor Agassiz attempted to extinguish the fire by injecting chemicals into the mines, and it was thought at one time that the fire was extinguished, but it soon broke out again, making it necessary to seal them up entirely and thus try to smother the fire. Manufacturers of plated ware have had the matter under consideration, and while they will maintain present prices as long as possible, it is probable that they will be forced to make an advance on the price of all plated goods.

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THE legislature is to be asked to repeal the law making every Saturday afternoon a half-holiday, and there will be much opposition to the repeal. The same influences that secured the enactment of the law will be exerted to retain it upon the statute books. So far as general business is concerned, the law is practically a dead letter. No attempt has been made to enforce it outside of the banks and public institutions, but industrial pursuits have been carried on Saturday afternoons precisely as though no law on the subject existed. It was argued that the workingmen want this half-holiday, but it has been demonstrated where the question has been left to them that they did not desire to be deprived of the privilege of working half a day each week. They preferred to put in their full time. During the hot months of summer it is different, as there then seems to be a necessity for the half-holiday to enable workingmen to recover from the lassitude that overcomes them during the heated term. But when the air is cool and bracing, they need all they can earn by full six days' work. The banks are supposed to observe this law, but they do so only in part. They close the paying teller's window and pay out nothing after twelve o'clock, but all the other departments are open as usual, and one can deposit all the

money he desires. A law that is practically inoperative should not be allowed to cumber the statute books, or if this is to be preserved, it should be amended so as to apply only to the months of June, July and August, with September added, if necessary, by way of compromise.

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THE present issue of THE CIRCULAR begins the Nineteenth Volume of this publication. It enters upon the new year with a larger list of subscribers than it ever had before, and with an amount of advertising patronage that indicates the degree of confidence in which the journal is held by the trade. It is customary for publishers to announce at the beginning of a volume, something in the way of a programme explanatory of their purposes in the future. We have no such announcement to make. All that THE CIRCULAR has been in the past it will be in the future, with such improvements as time and circumstances may require or suggest. Year after year THE CIRCULAR has been enlarged and improved, never more possibly than during the past year. Whatever money and enterprise can do to make it such a magazine as the trade requires will be supplied. All our old corps of contributors, each a recognized expert in his particular line, will continue their contributions to our columns, and others will be added as we can arrange to secure them. Our special correspondents in different trade centers will continue to furnish bright, newsy letters each month, giving the trade news and gossip in their several localities. The editorial and news departments, will treat of current events and of such matters of general interest as every business man should be familiar with. No effort will be spared to maintain THE CIRCULAR at the head of trade journals, a position that has been conceded to it for many years.

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AS AN organization the Knights of Labor are suffering from a rapid decline. According to reports furnished by the General Secretary, the membership has fallen away in fourteen months from 723,000 to 200,000. This rapid decadence of an order that was so great a power two years ago that trade and commerce stood in awe of it, is due to the fact that demagogues and agitators obtained control of it, and, becoming intoxicated with their power, transformed it from a medium for redressing the wrongs of workingmen to a machine for oppressing the manufacturing and producing industries of the country. When this was undertaken, public sentiment, that had been favorable to the workingmen, turned against the oppressor, and the organization was doomed. It has lost its prestige entirely, and while a few professional agitators have managed to keep together a semblance of the order in some few localities, it has ceased to be a power that is either feared by capital or respected by labor. No estimate of the harm inflicted upon workmen and their impoverished families by these reckless and incompetent leaders, or the injury they have done to the cause of labor, can be made. So long as irresponsible power is the keystone of labor organizations, so long will just such irresponsible and reckless persons be developed to a body of workmen, a strike is of as much importance as is a declaration of war to a nation, and that the power to order strikes should be entrusted to men of the calibre of the average walking delegate, is an insult to the intelligence of the workingmen of the country. The labor organization that is to become a permanent and improving influence must recognize the essential rights of freemen.

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WHO originates styles in jewelry, is a question frequently asked but not easily answered. If a particular article introduced by a manufacturer bids fair to become popular, forthwith it can be found in the stock of every dealer, but what different manufacturers are engaged in producing it few could tell. Every manufacturer

employs one or more designers, whose exclusive business it is to make new designs for jewelry, devising attractive forms and combining fine workmanship with precious stones, fine gold and desirable shapes. These designers find their ideas in nature mainly, but popular sports afford them also abundant opportunity to exercise their talents. Of late there has been a great run on insects and flies, butterflies and bugs of all kinds, with brilliant stones decorating their bodies or wings, have appealed to the public and not in vain. Thousands of these have been sold, and many more thousands will be sold, for they are very beautiful, and serve the purpose of making useful lace pins, scarf pins, etc. Even some of the manufacturers of cheap goods have recently taken to employing special designers of their own, although the practice of stealing patterns from the manufacturers of fine goods has by no means been abandoned. Of course, these designers produce many sketches that are never used, the manufacturers disapproving of them either because they are too expensive to make or they do not happen to suit their fancy. Then there are other designers who work for the trade in general, making designs at hazard and submitting them to whoever they think will be likely to buy them. They are handed about from one to another till a customer is found or the designer concludes that he has made a failure. Many patterns of goods made by these designers are patented, having some mechanical construction about them that entitles them to be thus protected. But many manufacturers have their own ideas regarding designs, and will make a rough draft of what they want and turn it over to the practical draughtsman to elaborate. The ruling fashions in jewelry do not call for many different forms, although the modifications of those forms are innumerable. The styles now demand lace pins, bonnet pins, brooches, earrings, cuff and collar buttons, fob chains, and a few other ornaments. Variety in these is the present aim of the manufacturers. Precious stones are employed with profusion, and it is a rare thing now to see an article of jewelry made exclusively of the precious metals. But fashion is a fickle dame, and in a few years it may be expected that plain jewelry will have its turn again.

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WE BEG to direct attention to the letters of our numerous correspondents in this issue from different trade centers. These are genuine letters, written especially for THE CIRCULAR, by gentlemen whom we pay for their services. None of them are made up in the office from stale telegrams clipped from exchanges and labeled "special correspondence," but each one is prepared by a trustworthy correspondent who is on the alert for news and knows whereof he writes. We also beg to call attention to the great variety of technical articles contained in this number, and to ask our readers "where else can you find such an amount of valuable information directly relating to your business as is printed from month to month in THE CIRCULAR?" Some one has said that a paper is known and judged by the quality of the reading matter it prints, and men may be judged by the character of the papers they read. We are willing THE CIRCULAR should be judged by this rule, and trust members of the trade will also be willing to accept it. We may say in this connection that the proprietors of THE CIRCULAR have every reason to congratulate themselves on the manner in which the new year has opened for them in a business way. With the close of our volume in January, quite a number of subscriptions naturally ran out, but the subscribers, with scarcely an exception, promptly forwarded their renewals for the present volume, and many who were not subscribers before have commenced with this issue. Our subscription receipts for January were considerably in excess of those for January last year, and our list of subscribers has never been so large as at present. The present proprietors of THE CIRCULAR, being actively engaged in the business, attach greater importance to an extensive circulation than do publishers who print papers solely for what they can make out of them, and hence they have concentrated their efforts largely

to pushing THE CIRCULAR among the retail dealers of the country with most satisfactory results. The proprietors, who are themselves advertisers, demand that the cards of their patrons shall have the widest circulation possible, and hence special efforts have been made to push the subscription list. Our friends are invited to aid us in this matter, and if any reader knows of a person identified with the trade who he thinks ought to see THE CIRCULAR will send us his name, we will send a sample copy and give him an opportunity to become a regular reader of our magazine. We want every dealer in the country to have THE CIRCULAR, and to such as do not take it we will cheerfully send sample copies. So we say to our patrons, send in the names of any dealers whom you would like to have see THE CIRCULAR.

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PROMINENT citizens are quietly striving to work up a popular sentiment in favor of holding a grand international exposition in this city in 1892, in commemoration of the discovery of America by Columbus. During the past few years there have been a large number of semi-international expositions, but they have been such only in name or on the glowing circulars issued by their managers. The last one in which the government took really a national part, and which the people fully recognized as a national affair and took pride in as such, was that at Philadelphia in 1876. It is believed that another, on an even more magnificent scale, can be made successful in 1892, provided New York is selected as the place of holding it. No other city of this country is so well known abroad—in fact, to many foreigners New York is the United States, precisely as Paris is France to most foreigners, and a national exposition in New York would at once command the attention and confidence of all foreigners and thus insure its success. The Philadelphia Exposition was a great educator of our people, especially in all artistic matters, and the growth and development of art since then has been wonderful. As an illustration—while the Gorham Manufacturing Company exhibited a magnificent solid silver vase of original design and workmanship unequalled, that cost \$22,000 to manufacture, which received the highest commendation from experts in that class of work, nevertheless the managers of that company state that the Exposition was a revelation to them in certain lines of artistic work, and that they there received ideas that they have been working out since, to an extent that has almost revolutionized certain departments of their business. This company, like hundreds of others, at their own expense, sent their workmen there to study art and workmanship and they have been more than repaid by the improvement their employees have shown. To the men themselves, this was an opportunity of a lifetime, for they there saw the finest examples of work in their line that have ever been produced, and were enabled to compare the productions of one nation with those of another, and to study their styles and processes with every opportunity to compare one with another. From the Philadelphia Exposition dates what may be termed a "boom" in art matters in this country, which has been worth millions of dollars to our artists and manufacturers. It is thought that the time is ripe for another such display, and that other nations will be only too glad to co-operate for the purpose of showing the progress they have made and of seeing what we have done. Unless something now unforeseen should intervene to upset the prosperity of the country, it is more than probable that such an international exposition will be held in this city.

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SOME of the failures in the jewelry trade last month were of a most disgraceful character, showing very clearly that the insolvent debtors had deliberately laid their plans to rob their creditors to the fullest extent possible. Knowing that they were insolvent, and that a few days must bring the disclosure of that fact, these

swindlers went around buying goods wherever they had credit, and when the crash came there were neither cash nor goods to be found among the assets. We should like to name names in this connection and to denounce the swindlers individually and collectively in such terms as they deserve, but when the creditors are more anxious to recover a small percentage of their losses than to punish the perpetrators of the swindle, and so take no criminal proceedings against them, the law of libel prevents us from characterizing these individual transactions as they deserve. For us to say or intimate that a man is a thief, would put us under the necessity of proving it, and in these cases the creditors, by compromising the felony, have deprived us of the privilege of denouncing the culprits. The prophet of old probably had the libel laws in mind when he denounced in general terms all men as liars; had he individualized and called Jones a liar, Jones would have had him in Ludlow street jail before night on a charge of libel. Therefore, while we may say that recent failures have been characterized by features that involved criminality, we may not say that Jones is a criminal. When creditors think more of punishing crime than of compromising with criminals for a return of a fraction of their plunder, the press will have more freedom in commenting on affairs of the kind alluded to. This brings up the old question of how much does an individual owe to society in such cases, and how much ought he to sacrifice of his individual interests to secure the punishment of a criminal whose business it is to prey on the community. The fact that men are usually only too anxious to forego prosecution of a criminal on his restoring a portion of his plunder is so well understood, that thieves, burglars and other criminals take it into account when considering the chances of punishment for their offenses. A few years ago several thieves managed to steal over a million dollars' worth of securities belonging to a wealthy man; the detectives soon found out the culprits and could have sent every one of them to the State Prison, but had they done so their victim would have lost every dollar of his securities. In the end a compromise was made, by which all the thieves escaped punishment, and were permitted to retain enough of the plunder to repay them for all their time, trouble and enterprise in robbing the man. From a strictly moral standpoint, it was the duty of the victim in that case to sacrifice his million dollars to the good of the community, but we doubt if the most strict moralist among us would have made such a sacrifice. Compromise is the order of the day, and none realize more from it than do the criminal classes.

Art in Advertising.



HOW TO advertise attractively and judiciously is a problem that almost every business man has to struggle with. The necessity for advertising is admitted, but in these days when so many mediums for advertising are offered, each claiming to have superior advantages, the question as to what to use is one not easily decided. A business man has first to consider what portion of the public he desires to reach, and then to determine what medium is most likely to serve him best. This decided, he has next to determine upon the style and character of his advertisements, and this is the point upon which we desire to say a few words. Artistic advertising is now the rage, and all the magazines, trade papers and even the dailies furnish examples of this style of business announcements. Some of them are tastefully illustrated, while others depend upon their decorative form for their attractiveness. But whatever form or style the judicious or scientific advertiser may adopt, his aim is to present his advertisements in such quaint and original manner as to immediately attract the attention of even the casual reader, and, by its pleasing appeal to the eye, demand a perusal. Since the discovery

of the photo-engraving process there has been a marked revolution in the advertising field, and in place of the heavy, black and often repulsive looking type formerly employed, plates are used that are the exact photographic reproductions of the ideas of artists who make a specialty of this work. No business firm in this country is better known than that of Rogers, Peet & Co., dealers in clothing, and this familiarity with their house has been brought about by their system of advertising. They occupy a small space in several of the daily papers, and almost every day some new cut is displayed, representing some seasonable thought regarding their business. The public has grown familiar with their little outline cuts, many of which are humorous and all of them appropriate. So well did this style of advertising take with the trade, that the originators of it are forced to copyright every new design they bring out.

But the type founders have kept abreast of the demand for artistic type, and now manufacture styles that are beautiful and attractive, without offending good taste by their broad and black disfigurements. Light faced type, of modern styles, are more attractive than the old coarse, heavy type, and more likely to induce perusal because of its delicate symmetry than is the other kind that is so bold as to offend good taste. Another point in preparing an advertisement is not to crowd it. A few lines of attractive type are far better, when prominently set forth, than a full page of small crowded type, that attempts to tell a long story in a limited space. There are a few artistic advertisers in THE CIRCULAR who know what will best attract and hold the attention of the reader. We wish there were more of them, for the demands of some of them for bold type destroy the artistic features of the paper, and tend to defeat one of the objects we have in view, viz., the production of a trade paper that shall leave nothing to be desired in its typographic appearance. If our advertisers would leave the matter of display type to the good taste of the printers, whose business and ambition it is to produce the best examples of his art, we venture to say that they would be better pleased in the end, while our paper would be much improved in appearance. Each one then would get a good display, and his announcement would appear quite as prominent as it now does, by the same rules of contrast that now prevail. But some advertisers will not be content unless they can see their own names staring at them from their advertisements, in big, bold type, large enough to satisfy the cravings for notoriety of even the most exacting of modern sensational actors. It is not so much their business that they are advertising as their own individuality; they desire to have it particularly understood that they are running a business, the character of which they are less anxious to make known than that the world should become familiar with their names. Judicious advertisers demand that their announcements of seasonable goods shall be given prominence, while the name is of secondary importance to the address at the bottom. We would like very much to improve the appearance of our advertising pages, and have expended large sums in the purchase of new and modern type for this purpose, but our efforts are negatived to a considerable extent by patrons who demand large, coarse type, or fill their spaces with heavy black cuts. We like illustrated advertisements, but it is quite as easy to make a light faced cut as one that appears as a blotch upon the page. As an illustration of this, the Waterbury Watch Company has adopted the style of outline cuts to represent their watches, and they convey as definite an idea of what they are as would a more elaborate cut that would appear black and offensive to good taste. We have had prepared by a special artist a number of ornamental borders for pages and half-pages, with a view to inducing our patrons to improve upon the general character of their advertisements, by substituting artistically displayed announcements for the heavy type they now insist upon having. We will take pleasure in showing these to any one who may feel an interest in the matter. The designs are in the modern decorative style of art, and will make exceedingly attractive advertisements if not overloaded with reading matter.

*Magnetism in Watches and its Control.

[A Paper read before the Chicago Electric Club by C. K. GILES.

IN CONSIDERING the effects of magnetism on the time-keeping qualities of the watch, we must first ascertain the parts affected and locate the points of attack, and then investigate, by experiments and otherwise, the *modus operandi* of the cause of this trouble, and its sources. The escapement, or vibrating, or moving parts, such as the balance wheel, balance spring, lever, scape wheel, roller table, etc., are the vital points attacked by magnetism. These are made of steel, and as they vibrate in a magnetic atmosphere, they are crossing lines of force and their free movements are interfered with, necessarily, according to the strength of these lines of force. The adjustment of the escapement of the watch which is made for a reliable timekeeper must be very fine and delicate to meet the requirements, consequently very susceptible to any and all influences; for instance, the balance wheel of an ordinary watch must vibrate five times per second, and 432,000—or nearly one-half million—times per day, and these vibrations are primarily depending on the balance wheel itself; secondly, the balance spring; thirdly, the roller and table in connection with the lever fork; fourthly, the lever and pallets in connection with the scape wheel and so on through the train down to the motor force—the main-

closely. Operating on this principle, we must go to the very foundation or seat of magnetic force within the watch—as the effects of magnetism have a cause in the watch, as well as outside the watch—and magnify the molecular action and the lines of force or influence to such an extent that we can see and estimate the aggregate effect. This condition called magnetism exists everywhere—it is the primary law, the ultimate fact—it is “inter-etheric and cosmic,” and exists throughout matter and space—it is the dual force of nature at rest, the normal condition of the molecules of all matter is one of dual polarity, generally called positive and negative. Magnetism, as it exists in matter, is only a condition, and the directive force of this condition in the molecules of matter, or atmosphere, or ether, is polarity, and this polarity creates, or is itself, the line of force; the intensity of this polarity is the strength of these lines of force, and

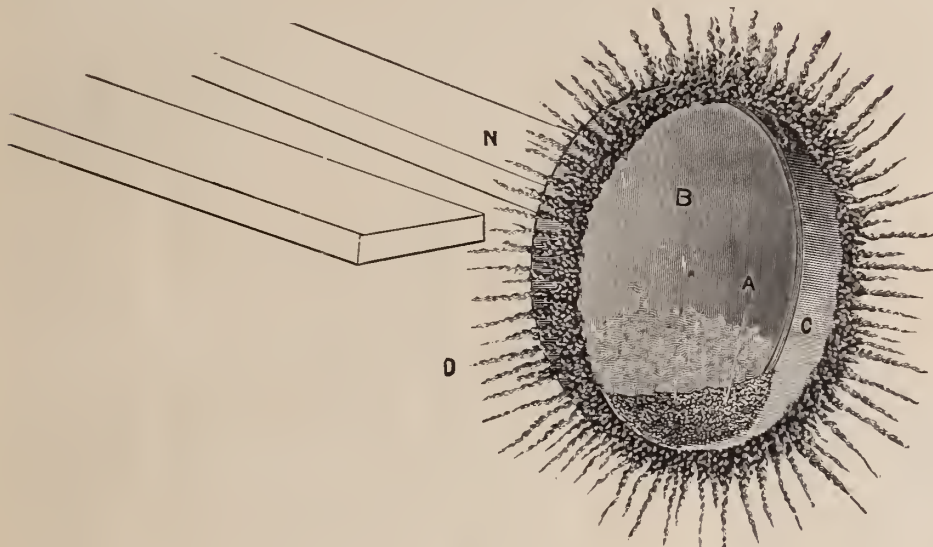


FIG. 1.

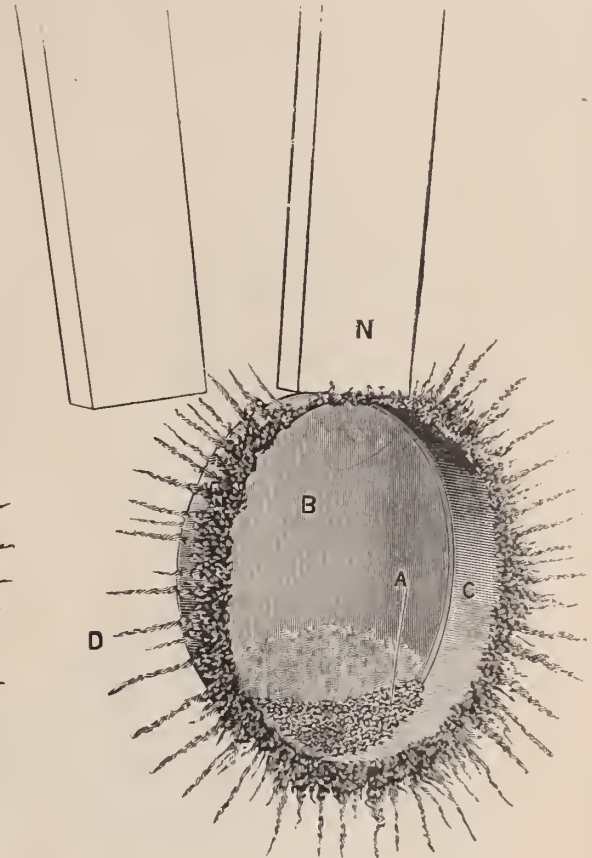


FIG. 2.

spring. Any influence brought to bear upon the balance wheel, or escapement, to change its vibrations 1-100 part, makes a difference of about 15 minutes per day; 1-90,000 part makes a difference of about 1 second per day; as the average linear space traveled over by the circumference of the balance wheel of the average watch in its vibrations is $\frac{3}{4}$ of an inch, then the measurement of the difference in vibration which will cause the change of time of 1 second per day, would amount to 1-120,000 part of an inch; as 1-40,000 of an inch is about the highest power of the microscope, it will be seen that a very small change in each vibration makes a large difference in time. The influences operating to produce this variation in time may be exceedingly small, therefore in searching for them we must magnify them, just as the microscope is used to discover the microbes or bacilli, or germs of human disease. As an instance which may be readily understood of how the defect in a watch can be magnified and made apparent, I will state that it has been found that the light, delicate hairspring of a watch affects the rate by its weight, therefore its weight must be taken into account in the adjustment. To discover the ratio of weight and error, they have made a hairspring ten times the usual weight required, and by testing this, have been enabled to arrive at the ratio of error very

the inter-etheric nature of this force extends it through more solid matter as well as atmosphere. The molecule is the resting place of this dual electro-magnetic force; every molecule of the atmosphere is divided into its own individual polarity, and arranges itself according to its neighbor; the mass of molecular atoms will arrange its polarity according to the existing conditions. The earth is the great primary magnet, and gives us the normal conditions of polarity existing in matter; any disturbance of this normal condition of polarity is where we get the phenomena of magnetic and electric effect. Scientists at present generally agree upon the molecular, or “atomic theory,” and the latest estimate we have seen is that a cubic inch of atmosphere contains from 60,000,000 to 100,000,000 molecules; the same size mass of silver or brass is estimated to contain about one-half this number, and so on. This electric or magnetic force exists in dual form, positive and negative, and must be exactly balanced; any disturbance of this dual condition results in some form of phenomena. The permanent displacement or annihilation of this dual condition of electricity or magnetism would be equal to creating a vacuum in the atmosphere—neither one nor the other can be fully accomplished. All the moving electric currents and magnetic conditions are looking for “satisfaction”—seeking their equilibrium, as water seeks its level; if the equilib-

*Read before the Chicago Electric Club, December 5th, 1887.

rium is not found in the atmosphere, or matter above the earth, it is sure to be found in the earth; the earth is the great "clearing-house" of the disturbed equilibrium of this dual force. Our globe represents the aggregate polarities of all the molecules composing it, and, as a mass, it must be in a condition of equilibrium, or state of satisfied polarity; the movement of electric currents and magnetic conditions about the earth are but the means of the disturbed dual polar force to keep up the equilibrium of the whole. Electricity is the primary cause of the condition called magnetism. A bar of steel whose molecules have been put in a condition of intense polarity by an electric current becomes a magnet. In a piece of tempered steel these molecules are so compact that they are not free to move, and cannot arrange themselves satisfactorily with the normal atmospheric polarity, therefore it may become what is called a permanent magnet, and will create a magnetic condition, equal in intensity to its own, in the molecules of atmosphere or other matter which impinge on its surface. It would appear then that the strength of magnetism, or of magnetic attraction, is the inertia of the molecule; when this is overcome, the polarities change, but not until then.

Electricity and heat are the most potent demagnetizers, or changers of polarities. Electricity acts as a demagnetizer simply by undoing the work it has done before, by reversing the polar condition it has caused; heat acts by expanding, and thus reducing the compactness of the molecules, allows them to resume their normal condition of polarity. Our globe represents the aggregation of nature's great dual forces in a state of equilibrium; it is the original magnet, and all the atmosphere, and metals, and matter on its surface, are polarized in harmony with it—in fact, to consider it more comprehensively and scientifically, our earth is but a cosmic molecule, moving in a cosmic medium through cosmic space, and all matter we know of are but atoms going to make up this cosmic molecule; therefore are of the same polar conditions as the earth.

We show here [referring to drawing] a sketch of this molecule—

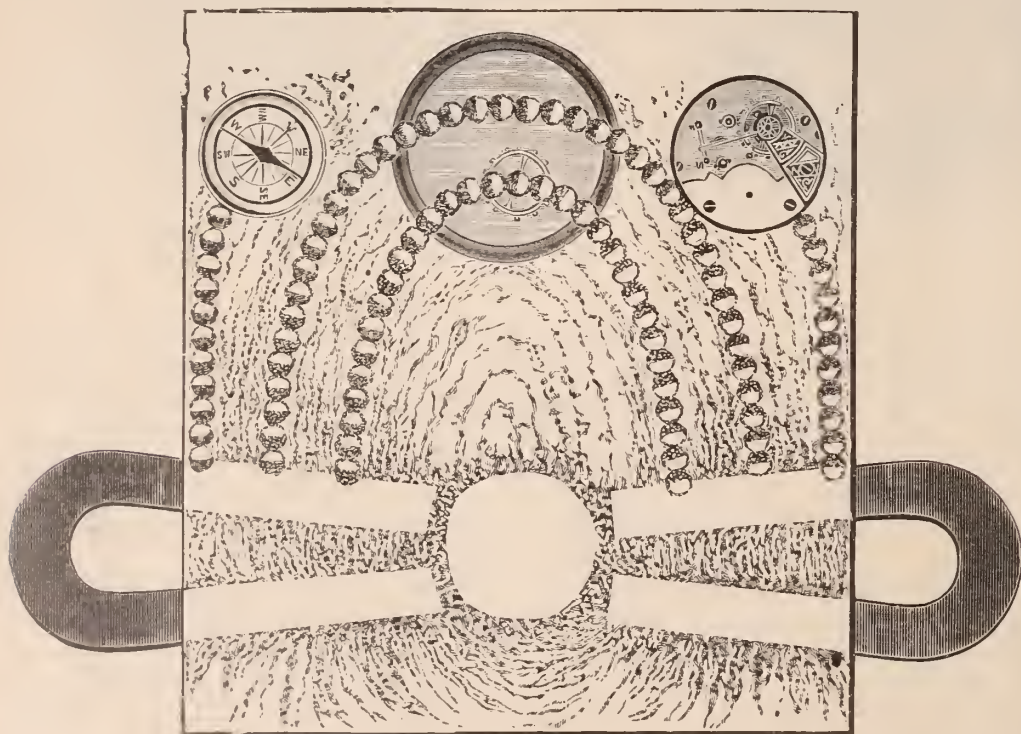


FIG. 3.

the earth; we know something of its physical laws and polar conditions, as taught by scientists, philosophers, astronomers and navigators. Here we have our dual polarity, north and south, and theoretical equator, where the two forces meet and equalize. As a mass, it is a complete molecule—its dual force is in equilibrium—at rest. In a very distorted way we attempt to show the condition of the atmosphere which surrounds the earth—if we can imagine a mole-

cule of air magnified to the size of one of these little circles; all the molecules of air are polarized in accordance with the earth, that is, the dual polarities arrange themselves in equilibrium with mother earth, and the mass of atmospheric molecules surrounding the earth—as shown in the dotted circle representing the molecules of air or lines of force. Take any line of these molecules, extending (horizontally as regards the earth) from the pole to the equator, and they will have the same degree or condition of polarity, and any matter—

a piece of iron, if you please—lying in the same horizontal plane will receive the same polarity; but if it is held perpendicularly, so as to cross a measurable space or number of these atmospheric molecules, then the mass of the molecules in the iron will arrange themselves just the same as a single molecule of air; the lower half will be of the same polarity as this half of our globe molecule on which we stand, and the upper

half will be of the opposite polarity; with a little exercise of the imagination this will make visible to you the cause of the phenomena of the changing polarity of a piece of iron as we change its position as regards the earth—the jarring of the iron simply assists in overcoming the inertia of its molecules, so that they more completely fall into the directive force. This also shows the lines of force in which all moving matter on the face of the earth is subjected—our watches included. This atmospheric line of force is utilized by Edison in train telegraphy, and again these invisible lines cause practical electricians the serious trouble which they call induction. Every piece of metal moving in this atmosphere must induce an electric current

by crossing these lines of polarity, or lines of force. Every piece of iron or steel creates around itself a magnetic field or circle of force, induced by the magnetic conditions of its molecules. Every molecule of iron is but a small electro-magnet, and the aggregation of these is the bar magnet; this can be made more or less intense by manipulating it with more or less of electricity. This halo of force (as in fig. 10, which shows the full-length spike and section of same) will be made visible by floating a piece of steel—a watch balance wheel, for instance—on a glass of water; take a piece of iron, a railroad spike, if you please, and lay it across the glass just over the balance wheel, and you will see the balance wheel move out from under the spike until it reaches a segment of the circle of this polar influence around the spike. This force seems to be in proportion to the bulk of the metal measured perpendicularly as regards the earth; if the spike is held perpendicularly, and the end presented to the balance wheel, it will be seen that this halo of force reaches much farther, and the balance wheel will be vibrated when at a much greater distance; by holding it a little nearer the balance wheel can be vibrated quite rapidly, showing that the lines of force are quite tangible. It will not make any difference which end of the spike is presented, as the polar conditions in the molecules of the spike are caused by the earth's force, and changed with every change of position as regards the earth. The same phenomena can be obtained with any piece of iron—an ordinary iron key, such as is usually carried in the pocket, will move the balance wheel floating on the water or cause it to vibrate when the end of the key is

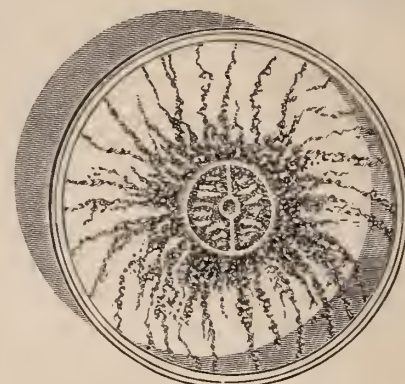


FIG. 4.

brought in close proximity to it. This experiment shows plainly that a watch may be affected by coming in the neighborhood of magnetic metals, such as will be found in any machine shop, or on a railroad, or by the metals carried in the pocket.



FIG. 10.

it to be. When a watch has more than the normal amount of magnetism, it should be demagnetized.

In demagnetizing a watch, we resort to the same force which magnetized it—that is, electricity. The pieces of steel, or parts to be demagnetized, are subjected to a rapid reversal of the electric current which changes the polarity, and at the same time we slowly remove the article from the influence caused by the electric current. In this process the magnetic condition is discharged and recharged at every reversal of the current, and by the slow removal of the article, we make each succeeding charge a little less than the preceding, and so on until the last charge is a minimum one, and the steel is reduced to its normal condition; it cannot be entirely free; its molecules will still be in the state of polar intensity left by the last reversing charge. In this demagnetizing process, we arrive at what appears to be an interesting fact: The demagnetization is accomplished by displacing one part of this dual force, and replacing it with another, and this displaced force moves out and seeks its equilibrium in its surrounding polarities; the molecules of the atmosphere which go to form the lines of force must be formed of the same dual forces as the molecules of steel, and subject to the same law—the line of force is but an elongated atmospheric magnet,—therefore, as we change the polarity of the atmospheric molecule, the same as we do that of the steel, we displace one part of the dual force which makes this polarity and replace it with the stronger force which is causing the change. The displaced force must move on, and seeks its equilibrium by the nearest available conductor, a force is set in motion, an electric current created, and its source is in the molecule.

But this universal force which exists in the metals of the watch, this magnetic influence, is not an unmitigated evil, but on the contrary is a decided advantage, when under proper control; like most of nature's forces—utilized, they are of immense benefit, while their attempted annihilation is equally detrimental. This control and utilization of the magnetic forces is accomplished by the use of the Anti-Magnetic Shield, which is found to protect the watch fully from all undue magnetic influence, and at the same time allowing

It is evident from the foregoing, that all the metals of which the watch is composed are subject to the universal magnetic and electric influences, therefore, the magnetic condition within the watch must be cared for quite as carefully as the magnetic force outside of the watch, in fact, the conditions within the watch are the most important. The normal condition of all steel in the watch is one of polarity or magnetism. Sometimes this is quite intense, and sometimes merely normal; but every vibration or movement of the watch is across lines of force, and the rate of the watch will depend upon the conditions of this force; therefore, *magnetism* is the governor of the rate of the watch—everything else being equal. If the mechanism is perfect, then the rate of the watch will be just what this subtle magnetic force allows

the use, in the construction of the movement, of brass and steel, with which alone, the highest horological accuracy has been attained when subjected to severe tests, and this *protection* is attained by utilizing the same natural law which causes the trouble, or use the same dual electro-magnetic force to protect the watch, and we secure it by surrounding the watch movements with a circle or shield (fig. 7) or highly magnetic metal, which will secure the lines of force existing in any charged atmosphere, and hold them in a complete circle, or closed magnetic circuit where all of the enclosed space will be neutral, or in a state of satisfied polarity.

Exactly how this process is accomplished is made visible, step by step, by drawings made from photographs of the experiments. This sketch (fig. 5) represents the bar magnet with a cardboard over it, and some soft iron filings scattered over the cardboard; by jarring the cardboard sufficiently to overcome the inertia of the weight of the iron filings, they will fall into lines of force which exist in the surrounding atmosphere. These are seen to be quite intense on the ends, but they find their equilibrium at the meeting point in the cen-

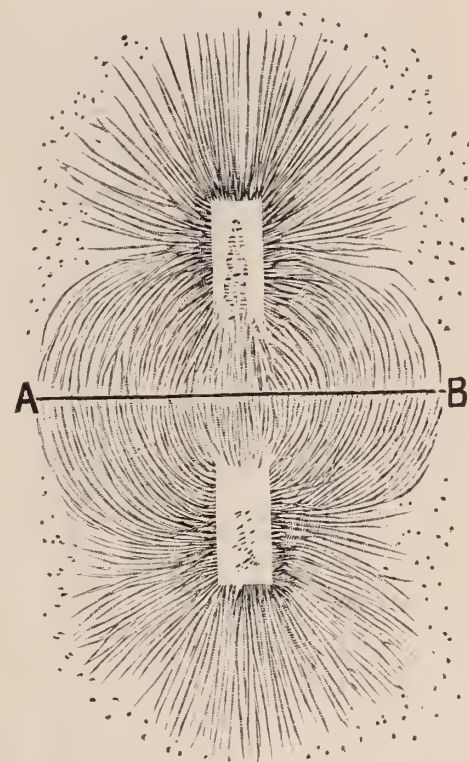


FIG. 5.

ter of the bar where there is a theoretical equator or neutral line. Now if this bar magnet is bent into horseshoe shape (fig. 6), and using the same cardboard and filings, we have what is seen in the next drawing; the equator or neutral line is extended from the center of the curve up between the poles and through the lines of force at their meeting point, from A to B; a neutral condition is shown in the filings at A, where the dual forces of the two poles meet and neutralize one another. Then again, if we form this horseshoe magnet into a complete circle, this same force, which is shown to be intense at its poles, will be extended around the outer edge of the circle because they lack any satisfying condition of polarity, except what is found in the atmosphere, while the neutral condition, which is seen in the horseshoe magnet at A, and in the bar magnet at its equator, A to B, will be extended within the space enclosed in this circle, because the force from any point in the circle will be met by an equal force from another point—just as the dual forces in the horseshoe magnet meet and are neutralized at A.

The dual force within this closed magnetic circuit is resting in a state of satisfied polarity. This is shown in fig. 1, which represents a shield cup, or box of highly magnetic metal, placed on one pole

of the horseshoe magnet, with its back in direct contact with the magnet; the iron filings adhere to the edges and on the outside surface with quite intense polarity, while the filings thrown in the box are perfectly free, as seen at A, and will fall out when the cup is reversed.

Fig. 2 represents the same cup with its edge, or one side, placed on one pole of the magnet, and held perpendicularly, and the iron filings applied as above. They cling with an equal degree of polarity all around the edge, but are free inside, as in fig. 1, showing that the lines of force within this magic circle are not upset or distorted by applying the magnetic force to one side only.

This magic circle is again shown in another form, fig. 3, which represents the cup, or box of shield metal, placed between two horseshoe magnets, with cardboard and iron filings over it; the direction of the iron dust showing the lines of force, or the condition of the

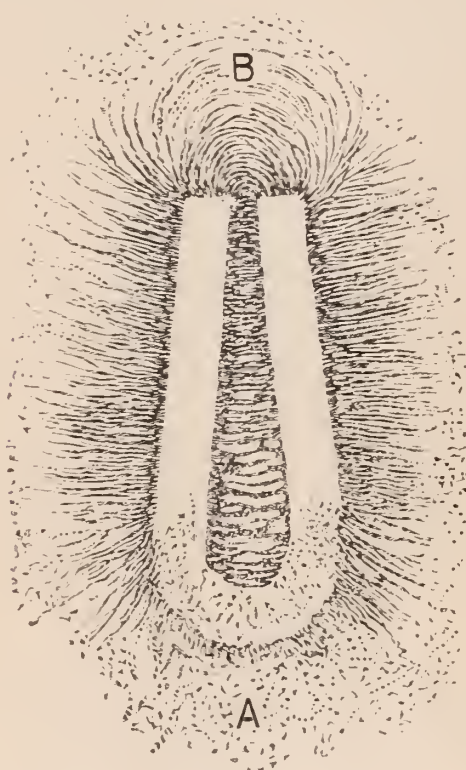


FIG. 6.

atmosphere surrounding the magnets (the dotted circles represent greatly magnified molecules of air or lines of force), and the neutral space within the shield cup. A little to one side, but within the lines of force, are placed a compass needle, a watch balance wheel, floating on a glass of water, and a watch movement. The compass needle and balance wheel fall directly into the lines of force and remain stationary, but it will be seen that the balance wheel of the watch movement must be cutting these lines of force at every vibration, which must be a retarding power, equal in strength to these lines of force. If a magnet is passed through the field or lines of force on the opposite side, you will see the balance wheel and the compass needle move and vibrate in response, showing that the lines of force are changed, and it is evident that the watch movement vibrating in this force must be correspondingly affected; but our closed magnetic circuit or shield circle remains the same and is uninfluenced. A watch movement placed within this circle will vibrate in permanently constant conditions, regardless of what disturbing influences are brought to bear by the law of the magnetic circuit, the more force applied, the greater their resistance, and this holds good up to the point of the total annihilation of the magnetic circuit. This circle of equalized polarity is kept in an even magnetic condition either by the induction from the earth's forces or it can be made stronger and more intense by reinforcing it with small pieces of steel, or magnets, on the outside. The watch case springs furnish

this reinforcement. This will give the watch escapement a medium to vibrate in where all the lines of force are exactly balanced and which will not be unbalanced by any ordinary outside magnetic condition. And further, the vibrations of the balance wheel are



FIG. 8.

controlled to a certain extent by the lines of inter-etheric polarity, which exist in this medium within the circle, and is the steadying power or governor to rate the watch against. The conditions thus created make the residual force which is in the watch a tangible, controllable influence, and make it even and constant.

This tangible force, residing in the molecules of steel composing the balance wheel, is made visible in fig. 4, representing a balance wheel within a shield cup, and the lines of force taken as developed with the cardboard and iron filings, as in the other experiments. This sketch shows an outline of a watch movement within the shield circle, and the lines of force, or magnetic field, which surrounds the steel parts of the watch, the mainspring, pinions, etc., and shows you the lines of force which the balance wheel cuts in its vibrations. This balance (fig. 8) shows an unequal magnetization of its arms and circumference. The effect of this condition of the balance would be the same as running a watch with the balance out of

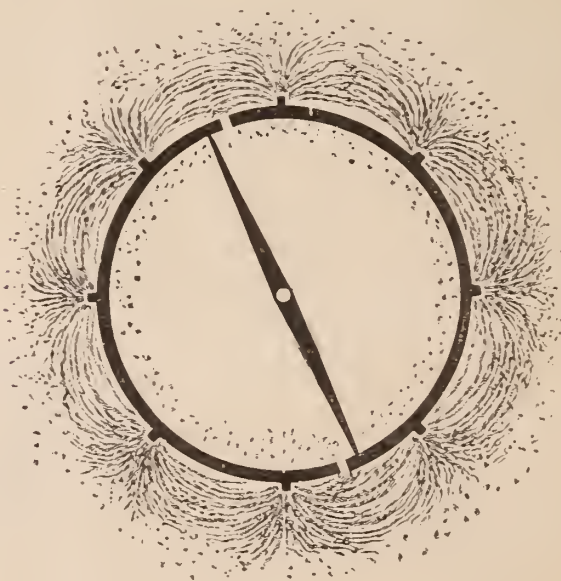


FIG. 9.

poise, and is of frequent occurrence. This defect was discovered accidentally in searching for the cause of variation in a watch, which otherwise should run perfectly. To overcome the unequal magnetic condition in the balance and at the same time diffuse the controlling force through as nearly a perfect circle as possible, we have made and used a multipole balance where we have eight poles instead of two, as in the old balance (fig. 9). This is accomplished by using steel screws, instead of gold, in pairs. These pairs, taken in

connection with the compensating circle of steel in the balance, give us virtually eight small horseshoe magnets, which practically distribute the polar force in the complete circle of the balance, and when placed in the shield box gives us an almost perfect control of its movement as far as the magnetic force is concerned. In order to distribute the polar condition evenly, through the balance, we first magnetize and then demagnetize it; this leaves the molecules of steel in an even "tonic" state. Utilizing the affinity of steel in the balance for these lines of inter-etheric force, we have the effect which horologists have sought so long in vain to accomplish; thus we use the great "arch enemy" of timekeepers to help us. We seize the subtle force which has been the "mischief-maker," and make it the means of perfection; in other words, we use magnetism to perfect the rate of the watch. The same force which has been the bane of horologists is the force which gives us the tangible, controlling power. The only stipulation made is, that the condition of magnetism in the watch shall not be more intense than that of the surrounding circle or shield (it is better that it be much less, or at its normal). If it be more intense, it would interfere with the control of the lines of force, which we have established. The application of this controlling principle to practical horology must be of immense advantage. It gives us the key which will explain the mystery of the variations in the rate of timepieces which horologists have searched in vain to discover. It will enable us to use in a "magnetic atmosphere" the very fine, delicate steel compensations and adjustments in watches, which have so nearly reached perfection, and which have been found to be the only compensation that will stand the test of time, and hold its shape in a wide range of temperature. Substitutes for this steel compensation balance which have been tested by both governments and individual expert horologists within the past ten years have met with but indifferent success, and have been abandoned and rejected. Any immunity from magnetism obtained by non-magnetic material is at the sacrifice of the permanent accuracy of the watch when subjected to the wide range of temperature of our climate. With the discovery of the means of control of this force, magnetism is made a servant, a friend, "a very present help in trouble;" with it we can rate the watch with the regular compensation balance wheel much closer under magnetic conditions than we could one made of non-magnetic metal, even in the same temperature (leaving out the question of "heat and cold compensation"); because, first, in the steel of the balance, we have this tangible affinity for the lines of inter-etheric force existing in the medium inclosed in this circle of magnetic metal; secondly, having created conditions of force which we can control definitely and intelligently, it gives us a steady force, or resistance, to run the watch against, and which acts as the governor of the vibrating balance, or keeps the vibrations of the escapement in a medium of equal, constant conditions.

A watch deprived of this magnetic life—made of non-magnetic material—is an emasculated timekeeper.

Regal Difficulties.



CHARLES I., in the very first year of his reign, went over the contents of the Jewel house to see what would be available to pledge for money, consigning them to the charge of his favorite, Buckingham, about to proceed as ambassador to the Hague, for that purpose. In vain did Sir Henry Mildmay, the waiter of the Jewel house, suggest the advisability of the king taking the advice of his council on the matter, and with their concurrence, using a warrant under the Great Seal, authorizing the pledging of the royal treasure, on the ground that there were too many, both in the court and in the kingdom, who looked upon the duke's proceedings "with more than a curious eye;" in vain did Lord Brooke, who had some of the crown jewels in his possession, throw difficulties in the way, and complain

of having to deliver up such valuables without a proper warrant. The king was determined on having his own way, and, before long, Mildmay wrote he had sent all the jewels and gold plate in his care, and if the king wanted anything more he must be contented with silver plate, as there was nothing else left in the Jewel house.

On the arrival of Buckingham at the Hague, he commissioned a Mr. Sackville Crow and one Philipp Calandare to raise three hundred thousand pounds upon two parcels of jewels and one parcel of gold plate set with stones. The Hollanders, however, required a guarantee from some merchants of standing that the jewels would be redeemed within three years. After four months of negotiation difficulties were renewed, and rumors of quarrels between Charles and the Commons caused the Dutch usurers to express great doubt on the King's power to pawn his jewels without the consent of his parliament, and Crow finally returned to England with the greater part of his precious charge. Crow's fellow agent seems to have been more successful, having managed to raise fifty-eight thousand pounds upon certain jewels. In 1628, a warrant was issued for the payment of three thousand pounds for interest on the above named sum, but twelve months later, Calandare writes to Secretary Dorchester that his brother had written him from Holland "that those who have the pearls in hand, and also the Widow Thibaut, who has his majesty's jewels of the 'Three Brethren,' will not wait any longer, but proceed to execution before March, and begs the secretary to prevent the damage and dishonor which will be caused by delay in redeeming the pledges." Upon this Charles took the affair in hand himself, and sent out instructions to sell four thousand tons of iron ordinance to the States General for one hundred and twenty thousand pounds. With this sum the plate and jewels pledged in Holland, and "the collar and rich holasses" pawned to the King of Denmark were to be redeemed. But the jewels did not find their way to the Jewel house, and through the rogueries of parties concerned, much spoliation occurred.

In 1629 Charles took away from the secret Jewel house a fine, large agate, engraved with the portraits of Henry VIII. and Edward VI., and at the same time ordered the sale of sundry articles of more or less value. Among these discarded ornaments were twelve pieces of goldsmith's work, like friars knots, with ninety-one pendant pearls, being part of a collar of gold, two great half round pearls taken from the "Mirror of Britain;" four gold collars, including that of the Order of St. Michael, composed of twenty-four knots of gold, and twenty-four scallop shells, with the saint hanging to it by a couple of little chains, also a gold loraine or double cross, set with diamonds and rubies, an old jewel in the shape of the letter M; a circlet of gold "now made for our dear mother, Queen Anne, having in the midst eight fair diamonds, eight fair rubies, eight emeralds, and eight sapphires, and garnished with thirty-two small diamonds, thirty-six small rubies, and sixty-four pearls, and on each border thirty two diamonds and rubies; and a girdle of rubies in the form of red and white crosses." A year after this sale Charles accepted £1,108 from James Maywide, and in consideration of that sum, authorizing him to retain as his own property two large diamonds upon which he had previously advanced £11,346.

While all this pawning and selling were going on Charles patronized the jewelers as liberally as though the royal exchequer was overflowing with riches. In the very year that his agents were bringing England into contempt abroad, by carrying her crown jewels from money-lender to money-lender, the King added to the royal collection a diamond costing eight thousand pounds, a gold ring of four hundred pounds, a fair jewel set with diamonds, worth nine thousand five hundred pounds, and a mirror set with diamonds, priced at two thousand five hundred pounds. He purchased three thousand pounds' worth of jewelry for the Queen, from Mercadet, and when the jeweler presented the order for the money, he was told that the exchequer had not the wherewithal to satisfy the demand, and was compelled to give it some months' credit. John Vaulier, who supplied the King about the same time with about two thousand pounds'

worth, is found, after eighteen years of constant dunning, still without his money, while Sir Thomas Roe, after waiting patiently for three years and a half, complained bitterly, that he saw no prospect of obtaining two thousand five hundred pounds for some jewels he had procured at the express desire of the Queen, and for which he had actually paid three thousand pounds.

The Record of Last Year.



WITH THE opening of the new year, reports are made public regarding the business enterprises of last year and the conditions that prevailed during the year. Taken in the aggregate, these reports show that the country was prosperous to a degree seldom equalled.

There was a notable absence of wild speculation, but legitimate business has unusually prospered. Throughout the entire country general business was kept up to the maximum limit, while in certain sections and in certain lines the activity was phenomenal. Competition was generally active, and rendered excellent service to both producers and consumers. The conservatism that was maintained in all lines tended to give the best results, and the same spirit of caution will doubtless characterize the conduct of business during the present year. The dangers of overproduction are being carefully guarded against by individual caution and by combinations between manufacturers of many products, and there seems to be a general determination not to permit the supply to outrun the demand and thus produce a glut in the market. Banking and money-lending institutions have exercised a most salutary influence upon trade by their conservatism, holding plenty of money to loan to legitimate business enterprises, but refusing to be parties to wild speculations that have proven so disastrous in the past. It is largely to the caution and prudence manifested by the managers of these institutions that the country is indebted for the continuance of the prosperous season that set in three years ago. Usually after one or two years of good business the financial institutions have given encouragement to the speculators, and the result has been a financial panic, disastrous to all kinds of business. During the past year there has been an abundance of money obtainable on easy terms for industrial enterprises, but the speculators failed to control finances in a manner to cause any serious disturbances. Among the numerous signs of prosperity that marked the year just passed, it is officially stated that upwards of 12,000 miles of new railroad track were laid, some of the western roads reaching out into entirely new country and thus opening it up to civilization and cultivation. The amount of building that was entered upon in 1887 has seldom, if ever, been equalled in one year. This included the erection of many elegant and costly business structures in the cities, handsome residences in the suburban places, and the upbuilding of several new villages almost entire. In the West, especially, there was an amount of new construction that would astonish any one who was not an eye witness to its progress. Those old fogies of the Atlantic seaboard, who sit down in their offices and only know of what is going on from what they read in the newspapers, have little idea of the magnificent development of the resources of the country and its growth that have been going on during the past few years. Unless one has traveled through the West and South, he can have little knowledge of the new business centers that have sprung up and the great amount of wealth controlled in them. Every business man ought to take a journey across the continent at least once in five years, in order to keep informed as to the conditions of the country, that he may be able to direct his own business with judgment and intelligence. There is some apprehension that Congress at its present session will indulge in some tariff tinkering, but sagacious politicians predict that little will be accomplished in this direction, as it would not be "good politics" for either party to take pronounced action in the matter

until after the people have had an opportunity to express their views at the polls. Therefore these sages predict that Congress will indulge in some tariff pyrotechnics, but end by precipitating into the presidential campaign the issue of protection *versus* free trade. The business element can better stand a campaign of stump oratory than one week of congressional tariff tinkering.

As closed the old year, so begins the new, with the conditions all favorable, and promising a good and profitable year's business. The holiday trade with the jewelry industry was remarkably active, the sales phenomenal and the profits satisfactory. With the exercise of prudence and care, avoiding a rush to extremes, the trade will undoubtedly be as satisfactory this year as it was last. The outlook is promising, but it is the part of wisdom for ever one to be on the lookout for the "unforeseen," which not unfrequently interposes to upset the predictions and calculations of the wisest.

Workingmen and the Knights of Labor.



URING the last week of the old year, the Knights of Labor attempted to obtain control of the Reading system of railroads and coal mining industries. This has been one of the strongholds of this organization, and the leaders, finding the process of disintegration steadily weakening the order in other sections of the country, seem to have resolved to make a last desperate effort to show their strength and thus revive interest in the organization. The fact that the Reading road was delivering coal to certain contractors who employed non-union men to

handle it, was made the pretext for the Knights to order a strike of all employees of the road and of the coal miners in its employ. Had all obeyed the order to strike, upwards of 60,000 men would have been thrown out of employment in the dead of winter, without any adequate provision to prevent them from freezing or starving. Fortunately, a large number of them absolutely refused to obey the order, and this so affected the others that they resumed their places after two or three days' idleness. But a convention of Knights was called, and it was resolved to again order a strike, but only a small portion of the men responded to it, and the railroad was but little embarrassed. The difficulty lasted several days, the leaders of the Knights vainly striving to force a strike of all the employees of the railroad company, while the officers of the company absolutely refused to make any concessions whatever to the demands of the leaders. In the end, the strike, which was abortive from the first, was abandoned, and the men resumed work on the old terms. As a result, a number of those who had taken an active part against the company lost their situations, new men having taken their places, and the railroad officials refusing to discharge them. President Corbin, of the Reading road, is entitled to the thanks of the entire community for the manly stand he took and maintained against the Knights, refusing to recognize them as such, and notifying his employees that those of them who had been dragooned into joining the order would be protected if they saw fit to withdraw from it and resume their manhood. Following the strike of the railroad men, came a strike of the coal miners in the Reading coal mines. Several thousand men quit work in violation of a positive agreement entered into by them several months ago. At the time of this writing, this last strike had not been adjusted.

During the past year the organization of the Knights of Labor has

dwindled down to less than one-half the membership it formerly had, many assemblies uniting to surrender their charters, while the individual withdrawals were going on constantly. It may be said that the order has lost all its terrors and is now practically powerless. Its leaders, who are deriving good salaries from their positions, have made desperate efforts to keep it alive, but the course of events points to its early disappearance even as a name for schemers to conjure with. In every strike of magnitude directed by the Knights, they have been defeated most disastrously. Their bold attempts to destroy the rights of individuals has been the chief cause of hostility to the order, for neither employers nor workmen could consent to surrender their liberties as demanded by the leaders. The senseless and destructive policy pursued by the Knights of Labor is the logical outcome of the mistaken idea that wages can be permanently increased or the condition of workingmen improved by strikes. A more perverted notion never prevailed on any subject. To presume that the laborer can obtain more wealth by producing less is the very essence of absurdity. Yet this erroneous idea has pervaded the trades union movement from its earliest inception. With this heresy has grown another which is incorporated in the socialistic doctrine taught by Henry George, viz., that the laborer is the only producer and hence is the rightful owner of all wealth, and that, consequently, all profit, rent, interest, etc., is robbery, while the laborer, who is entitled to all, only receives what is left after all these alleged "stealings" have been taken out. Upon this basis it is confidently declared and very extensively believed that our present industrial institutions are simply a system of plunder, in which the laborer is the victim of all who are socially above him. According to this idea, the only hope for the improvement of the workingmen is the overthrow of the wages system, by converting the land and all the means of production into public property. The adherents of this doctrine are less anxious to increase wages than they are to disgust the workingmen with existing institutions, and thus promote what they call the "coming revolution." In the same way that the mad, wasteful, destructive policy of strikes is the logical result of the fallacy that wages are merely a matter of division, and can be increased by stopping production, is the growing disregard for the rights of property, vested interests and social institutions, which found expression in the riots at Haymarket Square in Chicago.

So long as the great mass of laborers believe that their wages are governed by their numbers rather than by their qualifications as workmen, will they continue to rely upon strikes as a means of increasing their incomes, and ascribe their defeat to a lack of efficient leadership rather than false doctrines. And so long as the workingmen believe that they are systematically robbed by their employers, that profits, interests and rents are obtained only at the expense of wages, will they continue to regard the capitalists as their economic enemy instead of their natural ally. When workingmen comprehend the natural relations that exist between capital and labor, and fully realize how necessary the one is to the other, strikes will be unknown, and the walking delegates will no longer wax fat at the expense of honest labor. What the workmen most need is, not scolding, but teaching; the persistent dissemination among them of sound economic ideas is the surest way to destroy socialistic influences and the occupation of the professional labor agitators, and to restore to every man, however humble, his right to individual action in the fullest sense. If the masses can be taught, as the press of the country can teach, by constant proof and illustration, which the events of our daily life afford, that profits are not taken from labor; that capital does not rob but always helps labor; that the two are of necessity interdependent; that the laborer always receives the smallest reward when he works without capital, and that his opportunities for increasing his income increase in proportion as the employment of capital is enlarged, the plausible but fallacious basis of the socialistic idea would be exploded, and harmonious industrial relations between employers and employed become possible.



* A Complete History of Watch and Clock Making in America.

[By CHAS. S. CROSSMAN.]

Continued from page 34.

Number Twenty.

THE FITCHBURG WATCH CO.—THE COLUMBUS WATCH CO.



THE FITCHBURG Watch Co. never really existed, although all the necessary preparations had been made in the expectation of forming a watch company at Fitchburg, Mass. Mr. Sylvanus Sawyer, one of the stockholders of the defunct United States Watch Co., of Marion, New Jersey, and a manufacturer of engines and machinery at Fitchburg, Mass., conceived the idea of starting a watch factory in his own town, first by commencing the manufacture of tools and machinery on his own responsibility, and when ready to commence the manufacture of watches, to form a stock company. With this end in view, he engaged Mr. E. J. Lowe as superintendent in 1875, who had for several years been superintendent at the U. S. factory at Marion. He leased a building in which to commence operations, and bought such machinery as was necessary to manufacture watch machinery. He also secured the services of the following named foremen and workmen, formerly with the U. S. Company, to take charge of the various branches of the work: Mr. Gilbert Crowell, Mr. Chas. Whitehouse, Mr. Wm. Guests, Mr. A. R. Bardeen, Mr. C. Vanderhoff, Mr. Chas. Dodge, Mr. Thos. Parker. They, of course, went to Fitchburg to assist in building the machinery, expecting to take charge of the various departments as soon as they should begin the manufacture of watches.

At the expiration of one and a half years Mr. Lowe's health failed him and Mr. Crowell took the position of superintendent, retaining it during the remaining one and a half years that work was carried on. It may be said with reference to Mr. Crowell that he was virtually the mechanical superintendent from the start, as Mr. Lowe devoted much of his time to the business management, and was obliged to be absent part of the time on account of poor health.

At the expiration of three years enough machinery had been completed to manufacture 20 watches per day. No watch company had as yet been formed, as there did not seem to be any parties with available capital who wished to invest it in watch manufacturing. Mr. Sawyer had expended \$45,000 in the building of machinery, and felt that he could not go on any further with the enterprise on his own responsibility. Work was therefore discontinued, and the employees scattered to other factories. The machinery remained in Fitchburg.

At the expiration of two years Mr. Crowell returned to Fitchburg, and, in conjunction with Mr. Sawyer, started the Sawyer Watch Tool Co. They disposed of a large portion of the machinery already made

taken out and carefully examined, as also were the small hollows on the adjacent hillside. This diamond must therefore have been transported in decomposing soil from distant higher ground in the vicinity during a heavy freshet, or may have been dropped from some concentrations brought there from some gold mine, by a miner who lost it from his pan. Its value as a gem, not counting any value its American origin may attach to it, would be from about one hundred to one hundred and fifty dollars. A number of small stones, exhibited as diamonds, have been found at Brackettstown, near by. They are identical with the supposed fine diamonds found by Capt. J. C. Mills at his mine at Brindletown; that is, transparent zircon or smoky-colored quartz, the former of which has a luster that is readily mistaken for the diamond's by an inexperienced person. A number of pieces of bort (rough diamond) exhibited as from the same section, I am informed on good authority, are of South African, and not North Carolina, origin. It is to be hoped that the few legitimate finds which have actually occurred at this locality will not lead to any deceptions, which would greatly retard any natural development.

The $3\frac{1}{2}$ -ounce stone, said to be a diamond, which was found by J. S. Keyser in digging for coal near Ponca, Nebraska, proved not to be such, although the excitement it caused was certainly genuine.

Diamond cutting, though now carried on here much more extensively than ever before, has not always proved a profitable industry. The price for rough diamonds in the London market is so close, and they are disposed of so soon after their arrival, that unless purchases are made with the greatest possible judgment, the competition of the foreign cutters, who are convenient to the market, cannot be successfully met. For this reason the trade has in many cases been given up here, yet the standard of merit has been so raised that to-day the finest cutting is done in the United States. A large part of the work done here consists in improving and recutting old stones that have been cut in Europe for weight only, or in more modern work that can be improved upon, and these branches are generally profitable. But even with a 10 per cent. duty on cut gems as a protection, it is not likely that we shall soon rival the great foreign cutting centers. Sardis, bloodstones, and other cheap agates are often cut to a uniform size for mounting, because it is cheaper to fit the stone to the mounting than the mounting to the stone, and such stones as are from time to time found here are generally cut in this country.

At the time of the publication of the last report the writer had not heard of the occurrence of the shale in the Elliott County peridotite, hence the statement then made in regard to it; but important investigations have since been made in that locality. In his remarks on the "Genesis of the Diamond" (*Science*, Vol. VIII., p. 345), Prof. Carvill Lewis alluded to the peridotite of Elliott County, Kentucky, and suggested that it is well worth while to examine carefully all localities whose geological composition and history are analogous to those of the South African diamond fields. Mr. J. S. Diller, in the *American Journal of Science*, August, 1886, refers to Prof. A. R. Crandall's having discovered two dikes of eruptive rock in eastern Kentucky, about seven miles southwest of Willard. Mr. Diller states that he found by microscopic examination that this rock belongs to the peridotites, and occurred in conjunction with a carbonaceous shale; although the exact contact of the two rocks was not exposed, hardened shale was found near the peridotite under such circumstances that the induration is certainly attributable to the influence of the eruptive mass. But this, he thinks, is not the strongest evidence that the peridotite is eruptive, for the peridotite itself includes many fragments of shale which were picked up on its way to the surface. The contact metamorphism has resulted generally in the development of a micaceous mineral, and the production from the shale of a rock such as has been designated spilosite. And in some notes on the trap dikes of Elliott County by A. R. Crandall and J. S. Diller, published in the report on the geology of Elliott County by the Kentucky Geological Survey, Frankfort, Kentucky, 1887—also in *Science*, October 29, 1886—it is stated that although there were

few exposures and the excavations made were inconsiderable, nevertheless he reached the conclusion that the shales had been distinctly metamorphosed by the peridotite, a fact which was most patent in the enveloped fragments of shale, which in one locality were quite numerous. He says that both forms of peridotite described by Prof. Lewis occur in Kentucky, but the brecciated form has not yet been found to contain diamonds. In the advanced stages of metamorphism little spheroidal bodies were found, pale yellowish to colorless, translucent to transparent, and remarkably uniform in size. These generally appeared in a form very suggestive of the diamond, resembling a hexoctahedron with curved faces. Notwithstanding that some of their properties favored the view that they were diamonds more or less perfectly crystallized, their solubility in concentrated hydrochloric acid rendered such a view untenable, and even if they were diamonds their value would be comparatively insignificant because of their small size. In concluding, he says: "The dark shale, which is frequently enveloped by the peridotite, is somewhat carbonaceous, but contains a small proportion of carbon as compared with that of the South African diamond field. H. Carvill Lewis (*Science* VIII., p. 346) remarks concerning the South African mines, that "recent excavations have shown that large quantities of this shale surround the mines, and that they are so highly carbonaceous as to be combustible, smouldering for long periods when accidentally fired." In the chemical laboratory of the United States Geological Survey, Mr. J. Edward Whitfield determined 37.521 per cent. of carbon in the shale from near the Kimberley mine, while the blackest shale adjoining the peridotite, near Charles Isom's, in Kentucky, he found to contain only 0.681 per cent. of carbon. For this reason it appears to me rather improbable that diamonds will be discovered at the locality in question." Nevertheless, upon the invitation of Prof. J. R. Proctor, State Geologist of Kentucky, Mr. J. S. Diller and the writer were sent by the United States Geological Survey to examine the locality, viz.: Isom's Creek, Elliott County, Kentucky. The plan was to search by sifting and carefully panning the stream beds receiving the drainage directly from the surface of the peridotite.

The peridotite alters and disintegrates readily; but, from the fact that the declivity of the surface is considerable, the transportation of material almost keeps pace with disintegration, and there is no great accumulation of residuary deposits upon the narrow divides and hill-sides. The specific gravity and durability of the gems found in connection with peridotite are generally greater than those of serpentine and other products of its alteration. On this account the gems accumulate upon the surface and in favorable positions along adjacent lines of drainage. We enlisted the service of the people in the neighborhood to scrutinize the steep slopes, where gems weathered out of the peridotite might be exposed. Particular attention was directed also to the examination of the solid rock and residuary deposits, which so closely resemble the material of the South African mines.

During a careful search over a small area for nearly two days, no diamonds were found; but this by no means demonstrates that diamonds may not yet be discovered.

The best time to search for gems in that locality is immediately after a heavy rain, when they are most likely to be well exposed upon the surface. It is proposed by those most interested to keep up the search economically, by furnishing to responsible individuals in the vicinity a number of rough diamonds mounted in rings, for comparison, that they may know what to look for under the most favorable circumstances.

Besides pyrope garnets, a few of which are good enough for cutting, several fairly good specimens of a green pyroxene were found. They resemble the same transparent mineral from Arizona. The South African specimens of this mineral are a little more opaque, but of a richer green color.

[The author devotes considerable space to the consideration of the artificial rubies that were put on the market in Europe some time

since, and were fully exposed in *THE CIRCULAR* of November, 1886. It will be remembered that after their character had been determined, the French syndicate decreed that all such stones should be sold as artificial and not as genuine. The tables which follow close this very interesting article.—Ed.]

Estimated production of precious stones in the United States from 1883 to 1886.

Species.	1883.		1884.		1885.		Total, 1886.
	Value of stones found and sold as specimens and curiosities, occasionally polished to beautify or show structure.	Value of stones found and sold to be cut into gems.	Value of stones found and sold as specimens and curiosities, occasionally polished to beautify or show structure.	Value of stones found and sold to be cut into gems.	Value of stones found and sold as specimens and curiosities, occasionally polished to beautify or show structure.	Value of stones found and sold to be cut into gems.	
Diamond				\$800			
Sapphire gems	\$300	\$2,000	\$250	1,500		\$500	\$500
Chrysoberyl	100		25				
Topaz	1,000		200	300	\$1,000	250	1,000
Beryl	300	300	300	400	250	500	5,550
Emerald	500						3,200
Hiddenite	100	500					4,100
Tourmaline			1,500	500	500	100	6,250
Smoky quartz	2,500	7,500	2,000	10,000	2,000	5,000	7,000
Quartz	10,000	1,500	10,000	1,500	10,000	1,500	11,500
Silicified wood	5,000		10,000	500	5,000	1,500	1,500
Garnet	1,000	5,000	1,000	3,000	200	2,500	3,250
Anthraxite		2,500		2,500		2,500	2,500
Pyrite	1,500	500	2,000	1,000	1,500	500	2,000
Amazonstone	3,500	250	2,500	250	2,500	250	2,250
Catlinite (pipestone)	10,000		10,000		10,000		10,000
Arrow points	1,000		1,000			2,500	2,500
Trilobites	500		500			1,000	1,000
Sagenitic rutile	500	500	500	500		250	1,750
Hornblende in quartz	500	100	500	100		300	200
Peridot	50	250	50	100		50	50
Thompsonite	250	500	250	500	250	500	400
Diopside	200	100			100		2,000
Agate	1,000	500	4,000	500	1,000	1,000	1,000
Chlorastrolite	500	1,000	500	1,000			
Turquoise	1,500	500	1,500	500	1,500	2,000	3,000
Moss Agate	1,000	2,000	1,000	2,000	500	2,000	2,000
Amethyst	2,100	250	2,000	250	2,000	100	2,100
Jasper	2,000	500	2,000	500			
Sunstone	250	200	250	200	250	100	1,000
Fossil coral	500	250	500	250			
Rutile							750
Total	47,350	26,700	54,325	28,650	38,550	24,900	78,750
Gold quartz	40,000	75,000	40,000	100,000	40,000	100,000	

IMPORTS.

Diamonds and other precious stones imported and entered for consumption in the United States, 1867 to 1886 inclusive.

Fiscal years ending June 30—	Glazier's.	Dust.	Rough or uncut.	Diamonds and other stones not set.	Set in gold or other metal.	Total.
1867	\$906			\$1,317,420	\$291	\$1,318,617
1868	484			1,060,544	1,465	1,062,493
1869	445	\$140		1,997,282	23	1,997,890
1870	9,372	71		1,768,324	1,504	1,779,271
1871	976	17		2,349,482	256	2,350,731
1872	2,386	89,707		2,939,155	2,400	3,033,648
1873		40,424	\$176,426	2,917,216	326	3,134,392
1874		68,621	144,629	2,158,172	114	2,371,536
1875		32,518	211,920	3,234,319		3,478,757
1876		20,678	186,404	2,409,516	45	2,616,643
1877		45,264	78,033	2,110,215	1,734	2,235,246
1878		36,409	63,270	2,970,469	1,025	3,071,173
1879		18,889	104,158	3,841,335	538	3,964,520
1880		49,360	129,207	6,650,912	765	6,870,244
1881		51,409	233,596	8,320,315	1,307	8,606,627
1882		92,853	449,313	8,377,200	3,205	8,922,571
1883		82,628	443,996	7,598,176	(*) 2,081	8,126,841
1884	22,208	37,121	367,816	8,712,315		9,139,460
1885	11,326	30,426	371,679	5,628,916		6,042,547
1886	8,949	32,316	302,822	7,915,660		8,259,747

* Not specified since 1883.

Gold Production.

THE San Francisco *Journal of Commerce*, in reviewing the mining progress for the first six months of the year, regards the future in a hopeful way. By applying new processes to reduce stubborn ores, the last grain of gold can be extracted. By using these, therefore, the quantity of the gold product will be increased. In California, the Big Bend Tunnel, on the Feather river, will lay bare twelve and a half miles of the river bed, and it is expected to dis-

close a bonanza of unparalleled richness. The Feather has for ages been carrying down the debris of the mountains, a great part of which is imbedded in what formerly was its channel, and in this the accumulations of the ages, it is expected, will be found. The banks of the river are also said to be rich in gold. Drift mining is flourishing, while quartz mining is assuming an importance hitherto unknown. The way in which the Cherokee mine is being worked in Butte county suggests a method by which other mines of the same class may be worked. The tailings are impounded by a system of levees some thirty miles in length. Many tunnels are being driven to develop the different leads. In Shasta placer mining is carried on to a considerable extent, and there is no end of rich paying dirt still to be had. New discoveries are being steadily made, and sales of some locations have been made at good prices. The mines of the Pacific coast, especially those of gold and silver, will long be one of the principal sources of its wealth. This is calculated by those who know, that we have enough gold and ore hills from the south end of the San Joaquin Valley to Oregon to yield twenty millions a year for two hundred years to come. The past year there has been a gold and silver yield of about eighty-five millions of dollars; this is two millions more than in 1885, and the largest ever reported. It shows that the Pacific coast is still the home of the precious metals, a little over one-third of the minerals gold, the balance silver.

Gilding and Gold-Plating.

Continued from page 360.



HAVING in previous numbers of *THE JEWELERS' CIRCULAR* described the baths and processes of electro-metallurgy, by A. Roseleur, we close the series with special technical directions necessary for the successful prosecution of the art, which could not be so conveniently described at the time. GENERAL WORKSHOP ARRANGEMENTS.

The size of the workshop, its internal arrangements and disposition, as a matter of course depends so much upon local circumstances that no definite rules can be given, beyond stating that it is necessary to provide a depositing-room, vats for solutions, scouring and cleaning apparatus, batteries, a magneto-electric machine, or other source of electric power; the various chemicals necessary for making and reviving depositing liquids; acids for cleaning and stripping; materials for making moulds and preparing their surface, &c. Order must, naturally, be the fundamental and ruling principal of every shop.

The establishment should consist of several rooms and an open yard, says G. Gore, LL. D., F. R. S., in his work on the Art of Electro-Metallurgy, *i. e.*, a room for depositing copper, another for silver, and a smaller and more private one leading out of it, for gilding. The rooms should be upon the ground floor, on account of the weight of the vats containing the solutions, and should be provided with a cemented floor, and a drain running into a small cemented well, to recover valuable liquids which may be accidentally spilled. They should be well lighted and ventilated, because of the obnoxious vapors sometimes evolved, and should contain conveniences for the placing of the vats, washing-troughs, and scratch-brush lathes, and be provided with a plentiful supply of water. An outhouse for contain-

ing a large iron boiler ; also a covered shed in a yard (for the process of dipping) will be necessary. The yard is required for precipitating solutions, from which the poisonous vapor of prussic acid is evolved. Instead of an outhouse a separate, but adjoining, room may be used, in which to erect the iron boiler for containing caustic potash solution, for cleaning greasy and other articles. If voltaic batteries are much employed they are best placed outside of the plating-room, because the vapor arising from them is unhealthy, and also tarnishes the articles. If a magneto-electric machine is used, it is also best to have it, and the engine which drives it, at a distance from the cleaning fluids, or in an adjoining day apartment.

Accessible from each of the rooms should be erected a low furnace, having a long horizontal flue covered with plates of iron, upon which are placed several large trays filled with hot sawdust, in which the wet articles are to be dried. Each depositing-room should be supplied with a water-tap and several large wooden tubs or troughs filled with water, for washing the articles. The "pickling" and "stripping" liquids are best kept in large stoneware jars, under the open roof in the yard. In the gilding-room will be placed iron vessels for containing the gilding liquids ; these vessels are usually of enameled iron, either wrought or cast, and should be supported on iron frames, with large Bunsen burners beneath, for the purpose of heating the liquids ; flues should also be provided to convey the products of combustion from the burners into the open air. Accessible also to each of these rooms should be placed several scratch-brush lathes, for scouring and brightening the articles. Round the walls of the coppering and silvering rooms should be fixed well insulated stout copper wires to convey the electric currents from the batteries or magnetic machines to the vats. For the gilding-room these will not be required, because gilding is usually effected by means of a small voltaic battery, or thermo-electric pile, placed close at hand.

VATS FOR SOLUTION.

The vats for containing silver solutions are of various dimensions and proportions, but usually they are about six feet long, three feet wide and nearly three feet deep, and they often contain 200 or 300 gallons of the liquid. They are made of different materials ; some are composed of wood only, others of two thicknesses of wood with lead between, but the use of wooden vats is nearly discontinued, because they absorb a large quantity of the solution, become saturated with it, and it soaks through the outside. A lining of gutta percha cannot be employed, because cyanide of potassium acts upon the joints of that substance. They are now made of wrought iron, sometimes with a thin layer of wool as a lining upon the sides to prevent the anodes touching them, or they are lined entirely with cement, but the cement yields up a little impurity (probably oxide of iron) to the liquid.

Each vat has a wooden rim securely fixed to its upper edge all round it ; upon this rim is fixed a rectangle of brass tubing an inch in diameter, to which is soldered a large binding-screw, for connection with the positive pole of the battery. Within this rectangle of tubing is also similarly fixed, but not insulated from the first one, a smaller rectangle of brass tubing, about half an inch in diameter with a screw for connection with the negative pole. Cross tubes of brass, about half an inch in diameter, and as long as the vat is wide, are laid in clean metallic contact upon the larger rectangle, and there cross tubes support, and are metallically connected with the large and flat sheet silver anodes, by means of frames of iron, which extend downward into the liquid. Similar, but shorter, brass tubes are laid across the vat, with their ends upon the inner rectangle, and these support, by means of wires the articles to be coated. All the points of contact of the cross tubes with the rectangle, the supporting frames and wires with the cross tubes and the other connections, are frequently examined and kept scrupulously clean by means of rubbing with emery cloth.

The wires for supporting the articles are usually formed of copper

about the thickness of bell-wire, and are protected (excepting their ends and those parts which are not immersed in the liquid) from receiving a useless deposit of silver, by inclosing them in short tubes of glass, gutta percha, or pure india rubber, and are bent at their lower ends, into a sort of a loop, when required to support forks or spoons, so that those articles may be readily slipped into the loops and supported.

In vats where the articles are kept in continual motion the cross rods supporting them are fixed to an iron frame with four small wheels (about three inches in diameter), which move backward and forward, to an extent of three or four inches, upon inclined rails fixed upon the edges of the vat, and impart to the articles a combined vertical and horizontal swinging motion, or they are suspended from a swinging frame.

CLEANING ARTICLES FOR RECEIVING A DEPOSIT.

All articles which are to receive a deposit require to be made scrupulously clean, especially if it is wished to make the coating adhere firmly to the receiving surface. It is the practice before plating an article to make its surface not only perfectly clean but also smooth by means of the revolving scratch-brush and by other methods. Articles of copper are usually not scratch-brushed but dipped.

The process of cleansing are both of a mechanical and chemical nature. The mechanical means are the usual ones of filing, scrubbing and scouring, with various gritty materials. Emery cloth is employed when the articles are dry, and fine silver-sand and a hand brush, or piece of canvas, when they are wet. In addition to this an instrument called a "scratch-brush" is continually used, and cannot be dispensed with.

A "scratch-brush" is merely a bundle of fine and hard brass wire, about six or eight inches long, bound round very tightly with other wire, except at the ends.

These wires are of various degrees of fineness, and are also annealed to different degrees to suit the various kinds of work. Four of such brushes are usually fixed in grooves upon the outside of the chuck of a lathe, so that the wires are parallel with the axis of the chuck. Another form of scratch-brush is in which the wires are radial instead of parallel.

To use these brushes a lathe is required. A "scratch-brush lathe," suitable for cleaning small articles, is too well-known by the readers of THE CIRCULAR to demand a description. Above the revolving brush is placed a cistern containing stale beer, a little of which is allowed to dribble upon articles during the process of brushing, and the brushes are surrounded by a screen to prevent splashing.

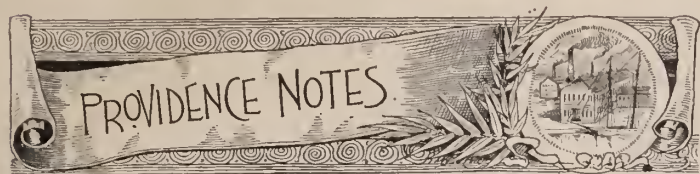
The chemical methods of cleaning consist in immersing the articles for a greater or less period of time, in various acids or alkalies, according to the nature of the metals. Alkalies are usually employed hot, and are generally used for removing greasy, tarry, or resinous matters ; and acids are generally used cold, after the greasy matters have been removed. The alkalies are kept in iron vessels, and the acids in stoneware pans, etc.

The alkali commonly employed is caustic potash, because it is the strongest. A solution of it is prepared by adding freshly-made cream of lime to a boiling solution, composed of about half a pound or a pound of pearl-ash to each gallon of water, contained in an iron boiler, until a small quantity of the clear liquid gives no effervescence on adding to it a few drops of dilute hydrochloric acid. The precipitate formed in the mixture is carbonate of lime, and may be thrown away. As this liquid rapidly absorbs carbonic acid from the air it should be kept covered as much as possible, and a small quantity of the cream of lime should be added to it occasionally, to renew its full degree of causticity. The articles to be cleaned are immersed for a short time in the boiling hot liquid ; copper only requires to be immersed a few seconds. Copper articles, joined by solder containing tin, must not remain long in the liquid, or the tin will dissolve

and be deposited upon the adjoining parts of the copper and blacken them.

Several kinds of acid liquids are employed, viz: dilute sulphuric, strong nitric and various mixtures of them. Nitric acid, for dipping, contains about 10 per cent. of sulphuric acid, and has a specific gravity of about 1.52.

(To be continued.)



The manufacturers who closed down some three weeks ago to take account of stock and balance up their books for the past year, to ascertain how much they had advanced or retrograded, were really surprised to find such a comfortable balance left on the correct side of their ledger, as the results of their labors for the past twelve months, after liquidating all outstanding claims. This pleasant balance reassures the manufacturer that his many efforts to please the public with something always new has met with their entire approbation, as shown by their liberal and paying orders extended to him during the past season, which, he feels, will act as a great incentive to more renewed efforts on his part to make his line of goods for the year 1888 more attractive than ever, if such a thing is possible. The number of new samples which some of the manufacturers are showing to the trade is simply beyond comprehension. A manufacturer to-day thinks nothing of putting in as many new designs at the commencement of the spring or fall trade as he used to have formerly for his whole line, besides constantly adding to it during the season.

The great foraging and picket guard of the advance army of salesmen, representing manufacturers of all styles of jewelry in both Providence and the Attleboros, from the finest designs in art mounted in solid gold and diamonds, down to the cheapest, that which is sold by measure and not by the dozen or single piece, has moved westward and, at present, is reconnoitring around Chicago, Cincinnati, St. Louis, and other cities of the West, taking into camp any stray orders that may be found straggling about, which will be immediately forwarded eastward by the first "through mail," and received with the same joy and air of satisfaction by the manufacturer as that which was displayed at the time of the return home of the prodigal son. Collections for the past month have been better than for any time for a year past; the jobbers seemed inclined to balance accounts in full to January 1st, 1888, which pleases the manufacturer immensely, as it gives him a good fat bank balance; but from good responsible parties at present he would rather get the orders than the cash, in order to keep his help employed and his works running to their full capacity. The business prospects for the year 1888 at present look very encouraging, to say the least, but it is almost too early in the season to say much regarding the opening. Some manufacturers, who have their salesmen on the road at present, report fair sales. The jobbers seem to be buying very conservatively again this season. The same careful style of placing orders was noted during the first part of 1887, which would seem to be a good solution of the question, why there were not more failures during the year 1887 than there were.

The manufacturers of Providence have expressed themselves pretty fully on that all-important and almost inexhaustible subject denominated as the "Abuses of the Trade," and on which THE CIRCULAR has written so much during the past year to effect some solution of the knotty problem, and has come to the conclusion that the remedy lies entirely in the hands of the manufacturers themselves.

Fred I. Marcy & Co., of Pine street, manufacturers of everything

new in the line of sleeve and collar buttons, have employed Mr. D. C. Landers to look after their extensive interests in the West.

It is currently reported that Mr. H. L. Chapman has formed a co-partnership with a Mr. Hunt, and that the firm name will be Chapman, Hunt & Co., and do business at No. 35 Point street, having bought the tools and machinery of the late firm of Chapman & Meister, of No. 409 Pine street.

It is also currently reported that Mr. J. C. Gray, of this city, is soon to commence business again, and that he has some intentions of locating in some one of the enterprising cities of the Canadas.

Albert V. Blake, of the defunct firm of Bradley & Blake, has commenced business once more at No. 170 Cove street, where we wish him better success.

The firm of George C. Case & Co., comprising the following gentlemen, Mr. George C. Case and Mr. William R. Dutemple, has, by mutual consent, been dissolved. The business will be continued by Mr. Wm. R. Dutemple, at the old number, 227 Eddy st.

Luther Brothers are showing a fine line of plate goods, ahead of anything that they have ever heretofore shown to the trade.

Hancock, Becker & Co., who have been driven with orders the past season, will show a fine line of samples for the spring trade that will surprise and please their customers and the trade in general.

Mr. N. S. Davis has formed a co-partnership with Mr. S. J. Emerson, and will continue the business as formerly at the old stand No. 96 Pine street, the style of the firm name being Davis & Emerson.

The firm of Cooke & Eddy was dissolved on the 2d inst. by mutual consent, the members forming it being composed of Mr. Daniel S. Cooke and Mr. Albert Eddy, of Providence, R. I., and Mr. Oscar M. Draper, of North Attleboro. Mr. Albert Eddy will conduct the business at the old number, 102 Orange street. Mr. Daniel S. Cooke and family, it is reported, intend to make San Francisco their future home.

R. L. Griffith & Co. have extended their quarters, and now occupy one floor at No. 129 Eddy street. Their shop is equipped with all of the latest improved machinery, and their line of samples for the coming season will be the finest that this firm has ever turned out.

Cameron & Cooper have succeeded the old firm of R. S. Matteson & Co., of No. 107 Friendship street, which lately dissolved partnership.

By the recent failure of Corn, Clark & Co., of New York, the manufacturing jewelers of this city and vicinity lost somewhere about \$5,000, which will probably be a total loss.

On the 29th ultimo the stock and fixtures of Schuyler & Bonner were sold.

J. B. & S. M. Knowles, the silversmiths, of No. 95 Pine street, were slightly damaged by fire and smoke recently, but the loss was small, amounting to only about \$400.

The firm of Cameron & Cooper, doing business at No. 107 Friendship street, was very short-lived, having been formed on the 2d ultimo, and already dissolved, Mr. Cooper retiring.

Foster & Bailey are reporting a fine increase in orders of late, and are prepared to exhibit a finer line of samples for the spring trade than ever before. Mr. Charles L. Kettlety will hereafter have charge of the New York office of Foster & Bailey.

Smith & Holmes, of No. 31 Point street, have been succeeded by Mr. G. H. Holmes, who will introduce some unique novelties for the spring season's trade, and will make the Astor House his headquarters during the season, where he will be always glad to show his samples.

Mr. E. A. Luther, late of the firm of Luther Brothers, is about locating himself at No. 96 Pine street, and is having his factory fitted up with machinery and fixtures for the manufacture of jewelry.

Mr. E. E. Kipling, late of the firm of E. E. & A. W. Kipling, has associated himself with his brother, Mr. R. A. Kipling, and will assume the entire management of the Providence branch of this house and look after all his interests in this country, while Mr. R. A.

Kipling will devote himself entirely to those abroad. With such a combination as these two gentlemen form, viz.: both manager and salesman, and with hosts of friends, older firms should look well to their laurels.

Mr. S. Kind, of S. Kind & Co., No. 441 Market street, Philadelphia, has been in the city for some days looking over the samples of our enterprising manufacturers, and ordering the latest of the new styles for his spring trade.

The Board of Directors of the Union Eyelet Co. held their regular meeting on Saturday last, and transacted some routine business, and adjourned *sine die*.

Mr. R. A. Kipling, importer of precious stones, who left New York on Saturday, December 31st, per Steamer "La Champagne," of the French line, arrived at Havre on Sunday, the 8th inst., well and in good spirits after a very rough passage. Those who go down to the sea in boats during the winter must needs suffer many inconveniences even on first-class steamers.

Mr. D. L. Safford, of the "Jewelers Mercantile Agency," No. 5 Custom House street, this city, was completely prostrated some three weeks since at the "Franklin Street House" with neuralgia in a very bad form, and his case was considered precarious for several days, but I am pleased to state that he came out of it all right and now is entirely recovered.

The Board of Directors of the Manufacturing Jewelers' Board of Trade held their monthly meeting in the rooms of the association, No. 9 Wilcox Building, on Monday, the 29th ultimo. The most important business transacted was in regard to the failure of the firm of Payne, Steck & Co., of Nos. 177 and 179 Broadway, New York. The meeting adjourned after voting in the following named firms as members: M. L. Read & Co., successors to Hudson & Farnum; Riley & French, H. F. Barrows & Co., and Dunham, Towne & Co. The members now belonging to the Board of Trade number one hundred and sixteen, and is constantly on the increase.

The following named manufacturing jewelers of Providence were represented at the Astor House the past week: Fowler Brothers, by Mr. George C. Booth; Godfrey & Adams, by Mr. G. E. Adams; Geo. L. Vose & Co., by Mr. Vose; B. L. Hall & Co., by Mr. Hall; S. K. Merrill & Co., by Mr. J. W. Hagan; Mr. W. R. Dutemple, by Mr. Lamb; Mr. John C. Harrington, by Mr. Harrington; Harvey & Otis, by Mr. Otis; E. B. Ingraham, by Mr. Thomas H. Pope; R. L. Moorhead & Co., by Mr. D. Mackintosh; Mr. Frank E. Comey, by Mr. Charles Battey; R. L. Griffith & Son, by Mr. J. B. Wentworth.

Secretary Marcus W. Morton of the Manufacturing Jewelers' Board of Trade, made a trip to New York recently in the interests of its members, who were affected by the failure of Messrs. Corn, Clark & Co., to see what agreement had been arrived at in regard to a settlement.

The Etruscan Art Co. located in the "Arcade," which has been engaged in the manufacture of small colored portraits, which are seen in so many jewelry stores, has been attached in the sum of \$250.00 by Messrs. Schultz & Co.

Mr. J. Alden, salesman for Mr. Robert Barton for the past few years, has gone in the insurance business, where he will be glad to see his many friends.

Mr. O. C. Devereux, the manufacturer, of Eddy street, has been granted a patent on a button or stud by the United States Patent Office.

Mr. E. B. Eaton, salesman for Mr. W. G. Hopkins, who was taken seriously ill while at the Palmer House, Chicago, some two months since, has been removed to his home at New York city, where he is at present improving as fast as can be expected under the circumstances.

Mr. Simon W. Sencerbox will, on the first of February, sever his connection with Mr. R. A. Kipling, the stone importer, where he has been for about two years. Mr. Sencerbox is a very pleasant and affable gentleman, and has made hosts of friends among the jewelers

of Providence and vicinity, who will regret very much of his making a change to call him away from these plantations.

R. L. Moorhead & Co., whose factory is at No. 53 Clifford street, will have the most attractive line of Rhine stone goods on the road for the Spring season's trade, the designs of which will be marvels of beauty, and will be decidedly popular with the jobbing trade throughout the country. This house is ever on the alert for the best interests of its customers.

The Gorham Manufacturing Co. are running their full compliment of men on heavily increased sales for their world-wide and justly celebrated class of goods. During the present year this concern intend to place more goods on the market than ever before, and we feel that their expectations will be fully realized when the grand balancing of books occur about the 1st of January, 1889.

George L. Vose & Co., of No. 59 Clifford street, report business as being very good at present, and they hope to place more of their celebrated bracelets on the market the coming season than ever before. This is one of the leading houses of the country in the manufacture of bracelets, and owners and makers of the best patented "Roller Link Bracelet" ever made.

N. Barstow & Co., of No. 29 Point street, report that the opening of the spring trade with them is very satisfactory indeed.

Fred I. Marcy & Co. have, the past week, issued their annual calendar, which is a gem of artistic taste, engraved in the highest style of the art by those sterling engravers, Messrs. John A. Lowell & Co., of Boston, Mass.

FAIRFAX.

Providence, R. I., January 16th, 1888.

P. S.—H. A. & G. M. Church are going out of business, and will be succeeded by Mr. Charles S. Pine in the manufacture of their celebrated roller-link chains and other specialties formerly made by the old firm.

Experiments with Going-Barrel Watches.



THE PART of a going-barrel watch that I propose to examine in this paper, says Richard Whittaker, is that which is known in the trade as bottom-supported and unsupported barrel arbors. The latter are sometimes called "suspended" arbors. This is a subject upon which horologists entertain widely-different views; and when opinions upon a question greatly vary, nothing can be more certain than that some must grossly err. I shall endeavor to show what are the facts of the case, regardless of the opinions concerning it; and in order to simplify and put into reading made easy, a matter that is confessedly difficult, I think it will be best to examine it from an experimental point of view.

The first attempt we will make is a very simple one. Take an ordinary sprung-under full plate fusee movement, see that the hole for the barrel arbor in the pillar plate is wide, and that the ratchet is small and loosely and badly fitted; put the watch together, wind up the mainspring and carefully note the arc of vibration. Then remove the name bar and notice the exact position of the barrel arbor, and the difference in the arc of vibration. I have found the following result: The barrel arbor will lean slightly in the direction of the fusee; the edge of the barrel will touch the plate and reduce the power; and the arc of vibration will be slightly diminished.

The second experiment may be made upon a movement similar to the first; but instead of the barrel arbor fitting loosely in the pillar plate, let the barrel arbor hole be opened in the mandril perfectly upright, and, though it turns easily, it is without side shake. Instead of the ratchet being thin and small, see that it is thick and large enough to come into close proximity to the teeth of the hour wheel; and above all, be careful to have it well fitted to the square of the barrel arbor. Put the watch together, see that the ratchet is close

to the plate, wind up the mainspring, note the arc of vibration, then remove the name bar and the following will be the result: The loss of the name bar will not alter the upright of the arbor, and the vibration will not be in any way affected.

From this most crude way of suspending the arbor, we are led to inquire into the direction of the force of the mainspring and the amount of the lateral pressure upon the barrel pivots, which is clearly shown by the following experiment: Take an ordinary going barrel; if the pivot holes are wide it will be an advantage; grasp the square tightly with the brass-nosed sliding tongues, grasping the barrel finally between the finger and the thumb; wind up the mainspring with your right hand. It will at once be seen that the force is at a tangent with the pitch circle of the teeth of the barrel, and that the amount of lateral pressure upon the pivots is nominal. Further, it will be seen that as you increase the tension of the spring, the amount of side pressure upon the pivot is also increased, and if the pivots of the barrel arbor are large—say, three-fourths of the size of the arbor—the friction will be increased, and perceptibly improve the adjustment of the mainspring.

The fourth experiment shows a barrel arbor attached or suspended to a pillar plate, that is capable of resisting at least one hundred times more side pressure than is necessary in a fourteen-size lever watch.

From these experiments I assert, first, that it is possible to attach a barrel arbor to a pillar plate that is capable of enduring all the pressure that is required; second, that a suspended arbor offers the great advantage of increasing the height of the mainspring without increasing the thickness of the watch, and it is, therefore, wise to adopt it where a moderately thin watch is required; third, that the invention of a suspended arbor (doubtless due to the combined labors of Berthoud and the elder Breguet) has played a most conspicuous part in the history of watchmaking. It can count its witnesses by millions, and its claims have a right to be patiently heard.



Our elections are over at last. It has been definitely settled that both the State and municipal regimes of last year, the former Republican and the latter Democratic, will be continued under the same official heads for another twelve months at least. The Legislature has organized, re-chosen its former presiding officers, and settled down to its annual routine. All of which facts, taken in connection with the significant absence of any startlingly unusual element in any branch of the local market, have united toward the solidifying and continuing of the commercial prosperity which began six weeks ago with the opening of the winter holiday season. While there is little to chronicle in the way of a boom, there has yet been during the past month a steady, healthful, conservative activity in all directions, which has made itself felt as a natural consequence and with accumulated benefit in all lines of the jewelry trade.

THE CIRCULAR's suggestion of a short time ago to the effect that those jewelry dealers who complain of outsiders encroaching upon their preserves by carrying stocks of jewelry, should carry the war into Africa by diversifying their own stocks by adding thereto various lines of goods that would be incongruous alongside an exhibit of fine jewelry, has met with considerable favor in this city. Not a few of our leading dealers have as a result been running attractive and liberal lines of stationery, of which the manufacturers are constantly producing fashionable novelties. But, perhaps, the cleverest

and most tasty innovation of this kind has been in the form of stylographic pens, the Cross pattern seemingly preferred. These are always in harmony with the legitimate contents of the most elaborately arranged show-case, and indeed, may, in a measure, be considered almost a necessary complement in the modern jeweler's stock.

It is remarkable, all things considered, how well our local wholesalers are doing despite the comparative lateness of their season. The New Year's spurt was but a repetition of that preceding Christmas, and orders are still coming in from the drummers who are threading the remotest routes on the New England circuit. As was to be expected, the general uncertainty that prevailed a couple of months ago regarding the safest fashions in which to invest, has since given way to an equally general conviction that almost anything that's rich, harmoniously designed, and symmetrically executed, goes. Fashion in the metropolis no longer conjures itself to a narrow round of preferences, but branches out eccentrically, and its stamp of approval has been endorsed by all the smaller dealers and the buyers in the outlying towns.

In store windows, especially those on Washington and branch streets, are keeping up their brilliant display. I have noticed with some surprise the almost endless variety shown in finger rings, which rival in popularity for gift purposes the finer grades of watches. Jeweled hoops and the marquise shape, or French oval, are more worn by Back Bay residents than the ordinary oblong cross settings, and numerous pleasing designs are made of a combination stone setting. Three emeralds, surrounded by diamonds, is a sample of this, and colored jewels of all sorts, are being sought after eagerly. More than one of our houses, indeed, are making a specialty of these odd stone lines. Among them the favorite seems to be a band set with the yellow topazes and a jacinth; another, with an aquamarine in the center; a third formed of one topaz, one jacinth, and an aquamarine; and last, but not least by any means, three-band designs, each of a different stone, and worn on one finger, giving a charming effect in colors, as a combination of ruby, sapphires, and diamonds.

I saw an unusually handsome vase in Bigelow & Kennard's. It was of deep dragon's-blood red, partially covered with a film of silver, which was put on irregularly, as on brushes, etc., and then beautifully etched. There were other exquisite pieces of bric-à-brac, composed of either metal and china, or china alone, close beside it, and indeed there are elaborate lines of this ware run by Shreve, Crump & Low and others of the larger retail houses. These latter report a very general and growing demand among their West End customers, and the more eccentric and richly designed lamps for both hall and drawing-room. Some of these are made unusually tall, with plain, square bases of dead-finished brass, and twisted stem of the same. Over this is mounted a large porcelain vase of pale yellow or some equally delicate tint, clouded and flecked with gold and covered with conventionalized flower work. On inquiry, I learned that this artistic part of the work is done largely by one young lady, and Boston can certainly congratulate itself on the possession of a rare genius in this line.

D. C. Percival & Co. are coming in for a full share of the general prosperity. This is an old-established house, and in every one of its three branches of enterprise, manufacturing, importing and jobbing, is the peer of any in this section of the country. There isn't a retailer in New England to whom this firm's name is not professionally familiar, and their road men are wiring orders daily. Their central warerooms at 392 Washington street are crowded with standard and novel goods, which compare favorably in variety and elegance with the best New York can furnish.

I heard a very funny comment made the other day in regard to THE CIRCULAR. One of our largest wholesalers—I won't mention names—laughingly said to me that he had but one criticism to make, and that was the publishers gave altogether too much for the money. He really thought the magazine had grown too bulky for comfortable reading. I assured him that it could stand all the criticism of that

kind there was going and thrive under it, too, and he admitted the same couldn't be said of any other publication in the field.

It wouldn't do for me to omit mention of Floyd, Pratt & Rounds, who always do a good business when there is any going. I am assured that the concern's books never balanced more favorably, and indeed this verdict is the universal one. Everybody seems hopeful, and when the annual stock-taking season shall have passed, mutual congratulations will be in order among the trade.

A. Paul & Co. report a steady market. All their clerks are busy, and I know of no surer sign of prosperity.

The Bay State Watch Case Company is also busily at work filling orders. A member of the firm told me the outlook was as good for the future as in the past, and that was saying a good deal.

Ripley, Howland & Co. are well known for their reliable and elegant lines of stock. They tell me that the "blue" spell of early December is a thing of the past. They, with their trade brethren, are counting their holiday profits.

Mr. H. Downes, who has been located on Bosworth street for nearly a quarter of a century, is one of our most enterprising of watch and clock-work makers. He is well patronized by the city trade, and supplies pinions, jewels, pivots in endless variety. I'm glad to chronicle his success, for it's well deserved.

A Happy New Year to all.
Boston, January 17, 1888.

LEON.

Precious Stones and Fine Jewelry.



MOST OF THE fine jewelry made now days combines precious stones with fine gold and exquisite workmanship. At the same time, rich and elegant jewelry could never be purchased so reasonably in this country as at the present time. Small precious stones are used in such profusion now in jewelry that the question is often raised of their genuineness, when the price paid for them is considered. Thinking some facts about the small stones used in the manufacture of jewelry would be interesting to our readers who are not manufacturers, a representative of THE CIRCULAR took occasion to interview Mr. M. Fox, one of the oldest importers of pre-

cious stones, who does an extensive business in supplying manufacturers with the almost endless variety of material which they use in their productions. Opening the drawers of his safe, Mr. Fox exhibited to us hundreds of packages of diamonds, rubies, emeralds, opals, sapphires, garnets, tiger-eyes, cat's-eyes, onyx, pearls, etc., varying in size from one-half the size of a pin head to stones as large as a good size marble, and varying in price from five dollars a hundred to \$1,000 for a single stone. But we were more particularly interested on this occasion with the small stones that sell by the hundred than with the more elegant and costly ones.

It may be said generally that the finer stones, whether large or small, are found in India and Ceylon, and are sent from there in their native state to Germany, where they are cut and made ready for the market. Rubies and sapphires are sold by the karat, but turquoise, garnets, pearls, etc., of the small sizes used for decorative

purposes, are sold by the hundred, the prices depending on their size and quality. Many of the decorative stones, known as onyx, amethyst, etc., belong to the agate family of stones, and are not so valuable as rubies, pearls, etc. But the great bulk of all these varieties, wherever found, are sent to Germany for cutting. The principal places where this industry is carried on in Germany are Idar, on the Idar River, and Oberstein, on the Nahe River. On these rivers have been erected numerous little factories operated by water power, where thousands of skilled workmen find employment. Their factories and machinery are very crude, the workmen are wet more or less the greater part of the time and suffer greatly in health in consequence, their average duration of life being about thirty-five or forty years. Formerly much of this work was done in France, but the workmen were driven thence at the time of the late war and took up their residence in these German places. Notwithstanding the hard work and exposure imposed upon them, these workmen receive scarcely enough wages to enable them to live. A man is furnished his board, and if he receives fifty or sixty dollars a year in addition he is doing very well. Women and children are employed to aid their husbands and fathers in certain parts of the work, so that the cost of production is maintained at so low a rate that competition is almost impossible. In dry seasons the factories can run but an hour or two a day, operated by water accumulated in dams during the night, and then the workmen have hard times indeed, their earnings being almost entirely cut off. They are extremely skilful in their work, cutting any stone given them, no matter how small, into shape and form that gives it commercial value.

The rough stones are sent from the mines to factors, who sell them by auction to the owners of these little cutting establishments, and French, German and English merchants send their buyers there to purchase the cut stones. In this way the products of these German factories are scattered throughout the world. Visitors in California are importuned at every turn to buy specimens of onyx, agate and other ornamental stones alleged to be the product of California mines, but Mr. Fox says that thousands of these come from the German factories and are sent out to California for the delectation of credulous tourists, who pay almost fabulous prices for these mementoes of their trip to the auriferous State.

These German workmen turn out some very beautiful work from the agate formations in the shape of umbrella handles, cane heads, jewel caskets, seals and an endless variety of charms and fancy articles, many of them being classed among stationers' goods. While India and Ceylon are famous for their productions of precious stones, the South American States supply many, while the finest turquoises come from Persia, Egypt furnishing many of a quality but little inferior. Garnets, amethysts, onyx and the agate stones generally are found in profusion in Brazil, whence they are sent to Germany and come back to us in the form of artistically cut cameos, or some other well known forms. In Brazil and Switzerland are found many natural crystals which are cut in Germany into many beautiful shapes. Cat's-eyes and sapphires come principally from Ceylon, small pearls from India, although Panama furnishes a few of the latter of an inferior quality. Pearls not larger than a pin head are cut into half, but even these fragments serve to decorate jewelry, and when skilfully mounted furnish a brilliant background for other gems. Rose garnets are mainly found in Bohemia and are there cut and made ready for the market. Queensland sends some fine opals, as does Mexico also, while the alexandrite, a beautiful green stone that changes at night to purple, is found in Russia. Crociolite, or tiger's-eye, comes from South Africa near the famous Kimberley diamond mines. Topaz comes principally from Brazil, which country also furnishes aquamarine, although much of the latter is found in the mica mines of North Carolina. The United States comes to the assistance of Brazil in providing tourmaline for the market, while in California exclusively is found the American ruby, which is of a fine, rich color. These are generally cut in this city. The chief stones used by jewelers in decorating their gold goods are emeralds, turquoise, sapphire, garnets,

pearls, small diamonds and rubies, brought from all parts of the world to these little establishments in Germany, where they are cut at trifling cost, and, passing through the hands of the importer, are sold to the manufacturers at small profit. In their natural state these small stones have comparatively little value, and as their finished state is the result of the very cheapest kind of labor, although highly skilled, it is not so much a matter of surprise that a single piece of jewelry may contain a variety of genuine precious stones without being extravagantly expensive.

We have mentioned that the finest turquoises come from Persia. It is a peculiarity of the Shah who rules that country, that he will not permit any unset gems to leave his dominions. As a consequence, every stone of importance in this line that comes from there has to be set in some form. A Persian gentleman, who had charge of the Persian exhibit in the New Orleans exhibition, was in this city recently exhibiting some magnificent gems, but they were all set in cheap brass rings or other worthless mountings, by which device they secured exit from Persia.

One of the queer things about our tariff is the discrimination it makes in regard to the duties on precious stones. An unmounted diamond pays a duty of ten per cent., but if it is placed in a setting it must pay twenty-five per cent; an onyx cut for a watch charm will be charged ten per cent., but if there is a hole drilled in it to facilitate the mounting, it is classified as a manufactured article and twenty-five per cent. exacted. A diamond ready for mounting pays ten per cent., but an umbrella or cane handle in similar condition is supposed to be completely finished and is taxed accordingly, while quite as much labor may be required to mount it in a marketable form as is required of the diamond. In other words, a stone beautifully cut is "raw material," while a stone with a hole in it is a manufactured article, and subject to two or three times as much duty proportioned to its value as the diamond. Notwithstanding the inequalities of the tariff, the demand for precious stones of all kinds is steadily increasing. They are required for use as single stones, as perfect gems to be set in combination and for decorating jewelry. While small stones are, as we have shown, comparatively cheap, when a stone weighs a karat or over, its value becomes more a matter of fancy than of any regular scale of prices. There may be two stones of equal weight with no difference in quality that the average buyer would notice, yet in the eyes of an expert one will be worth several times as much as the other. We know of no articles of merchandise whose prices are so much a matter of fancy as precious stones.

The Jewelers' Security Alliance.

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Counsel, HON. ALGERNON S. SULLIVAN.

For further information, Application Blanks for Membership, By-Laws, etc., Address
 P. O. Box 3277. 170 Broadway, New York.

At the regular monthly meeting of the Executive Committee, held in the Alliance office on the 16th inst, there were present President

Dodd, Vice-President Sloan, J. B. Bowden, Chairman, Messrs. White, Lewis and Secretary Champenois.

The following firms were admitted to membership:

Byron L. Strasburger, 15 Maiden Lane, N. Y. City; Frank D. Enney, 12 White Memorial Building, Syracuse, N. Y.; Mandeville & Co., 23 Marshall street, Newark, N. J.; Wm. Tobin, Jr., 408 Broad street, Richmond, Va.; Wm. J. Van Keuren 195 Main street, Honesdale, Pa.; Chas. A. Nolting, 4th and Walnut streets, Cincinnati, Ohio; Henry A. Burton, Charlestown, Jefferson Co., West Va.; T. Kircher, 301 Brady street, Davenport, Ia.; A. D. Cavin & Co., 22 School street, Boston, Mass.; R. S. Patterson, 906 Military street, Port Huron, Mich.; Emil Alter, 641 Broad street, Newark, N. J.



[THE CIRCULAR is not responsible for the opinions or statements of contributors, but is willing to accord space to all who desire to write on subjects of interest to the jewelry trade. All communications must be accompanied by a responsible name as a guarantee of good faith. No attention will be paid to anonymous letters. Correspondence solicited.]

A CORRESPONDENT CORRECTED.

To the Editor of the Jewelers' Circular:

We notice in your last issue that somebody gave an incorrect history about our business, as Mr. Bontecou was with Jacques & Marcus and I was watchmaker with Mr. Thos. Goldsmith for over 10 years, to which part I am his successor, as I bought the watch and clock repairing of the late Mr. Thos. Goldsmith for \$400 and paid him cash for it, at the same old stand where Mr. Goldsmith did business for a long time. Please correct in your next number.

Yours very truly,

M. W. RAPPAPORT.

Troy, January 19, 1888.

BACK NUMBERS OF THE CIRCULAR WANTED.

To the Editor of the Jewelers' Circular:

Can you furnish or loan the following number of THE JEWELERS' CIRCULAR: Vol. IX., 1878, of August. Enclosed 25c. postage stamps.

Respectfully,

A. L. SCHLIENTZ.

Defiance, O., January 16, 1888.

THAT COMBINE AGAINST PEDDLERS.

To the Editor of the Jewelers' Circular:

I, too, have observed the proposition to form a combine against peddlers, but I fail to see why a jeweler, whose stock was "fopped over" into his wife's name and thereby got his goods for *nothing*, cannot successfully compete, with the peddlers aforesaid.

Yours truly,

PARSNIP.

January 1, 1888.

THE LATE HENRY D. MORSE.

To the Editor of the Jewelers' Circular:

The death of Mr. Henry D. Morse, of Boston, known as the pioneer diamond cutter of the United States, brings to mind many interesting reminiscences. Mr. Morse has scarcely received the credit he deserves for his work. That he was the first in this country to cut diamonds is well known. Educating young Americans, both men and women, to his art, was not his greatest work. He showed the world that the art which had so long been a monopoly of the Hollanders, was degenerating in their hands into a mere mechanical trade. His treatment of the diamond gave a great stimulus to the industry both in the United States and abroad. Shops were

opened here and in London in consequence of his success. He was one of the few who studied the diamond scientifically, and taught his pupils that mathematical precision in cutting greatly enhanced the value as well as the beauty of the gem. The best cutters in the United States to-day are those who received their training under him. His artistic eye, sound judgment and keen perception enabled him to carry the art to a perfection seldom, if ever, attained before. Thanks to his labors, we now have among us the best cutters in the world, men who can treat the diamond as the gem should be treated to show it in its greatest beauty. The fact that so many fine stones were re-cut here since he started his wheel led to a great improvement in cutting abroad, especially in the French Jura and Switzerland, where both sexes are now employed at the trade, and, as a result of this, diamonds sold in the trade to-day are decidedly better cut than those of 20 years ago, before Mr. Morse turned his attention to what he, above all others, has shown us is properly an art and not an industry.

GEORGE F. KUNZ.

THE ENTERPRISE OF AN ALLEGED TRADE PAPER.

To the Editor of the Jewelers' Circular :

Several months ago the representative of a new jewelry organ that had been established to "meet a long felt want" and "cultivate neglected fields," urgently solicited us for our advertisement and we as urgently declined, as we have long found THE CIRCULAR good enough for us. Notwithstanding our declination, the enterprising journal knew better what we wanted than we did, and inserted and ran an "ad." of our business. Soon after January 1 they render us the amount alleged to be due for it, and ask "if we desire it continued for another year" ! ! ! We had heard of "journalistic enterprise" before, but this is the first time we ever rubbed against it in precisely this manner. We hear that some of the "ads." of first-class houses are kept in the journal referred to on the dead-head plan, as bait to draw in smaller fry—the advertisers never having ordered them and repudiating all bills for them, and yet the "ads." are still printed.

Yours truly, J. S. C.

A WATCHMAKER'S DUTIES.

To the Editor of the Jewelers' Circular :

In reply to "C. J. O." in your January number, I will state that these men that are willing to pay from \$20 to \$30 per week for watchmakers, have no trouble in procuring good workmen. If a man applied to me for a good watchmaker, a good salesman, a good engraver and a good repairer on jobs, I should ask him if he wanted that he should saw the wood and carry the water for the house. A man that is competent to fill the place of watchmaker and engraver is not obliged to go out in the back shop and do jobs, nor is it policy for a jeweler to pay a man a good salary to work on jobs that it is the work of apprentices to do. The contract that "C. J. O." alludes to, in which he would be willing to enter, viz., have a person to furnish him with material and all the work he can do and have one-half of the proceeds is well put in, but he must bear in mind that such a contract as that is entirely different from the contract the watchmaker makes in hiring out with a jeweler. In this case he has to take charge of the watch work, wait on customers, do engraving, look after the apprentices, show them how to do work and then have to do one-half of their work over, and case all the new watches, which have to be looked all over and some taken down and put in order. If "C. J. O." can book twice the amount of his salary in a case of that kind he is a good, smart workman, and is deserving of a great deal of praise. Another thing is to be thought of: the mainsprings are all put in by apprentices, which, of course, yield the greatest profit. And I will say again that there are plenty of good workmen to be had providing you offer them a good, honest salary.

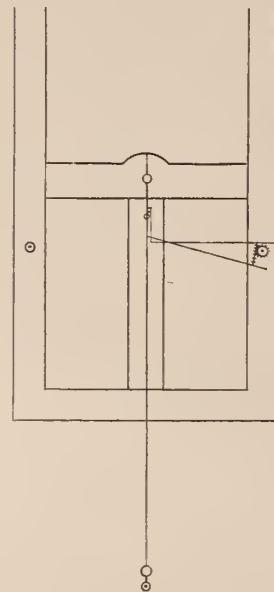
Manchester, N. H., January 9, 1888.

H. P. G.

REGULATING THE PENDULUM.

To the Editor of the Jewelers' Circular:

I send a rough drawing to show that the winding arbor of a spring clock may have a small pinion in connection with a segment on either side, made rigid, with arms of lever reaching to a point perpendicular with the pendulum, having a fulcrum a little ways from the connection, with lifting box to raise or lower the pendulum automatically, say, size of segments contains pinions 4, 5 or 6 times; this will serve



as gauge and stop to winding; raise and lower the pendulum in exact proportion to the increased tension or diminution of the spring by winding or relaxing in running. This will compensate for gain or loss of power resulting in equation of time. If this may be of service please see to it at once. I merely sketch the idea that you may give it proper form.

Very respectfully, C. A. PENN.

Byington, Ohio, January 11, 1888.

KIND WORDS FROM A DISTANT FRIEND.

To the Editor of the Jewelers' Circular:

I enclose my check for \$2 to renew subscription. Although over two thousand miles from the city where I was born, raised and have always done business, the welcome visits of your ably conducted paper serve me very much in the capacity of an old friend, and, in a measure, lessen the distance from the Atlantic to the Rockies. I sincerely hope that wherever I may be located, Boston or Denver, I shall continue to have the privilege of keeping myself posted through your instructive and newsy columns.

Denver, Col., January 11, 1888.

Yours truly,

F. W. AYER.

EDITORS AND PUBLISHERS BLUSH IN APPROVED FORM.

[Journalists and publishers are proverbially modest men, and readers of the following will please consider that the entire force of THE CIRCULAR has retired behind its cold weather fan and is blushing vigorously.—ED.]

To the Editor of the Jewelers' Circular:

Enclosed please find two dollars to cover new subscription of THE CIRCULAR for the year 1888. Allow me, dear sir, to wish you a very happy New Year. I beg you will excuse the liberty I take in sending you a few lines of meditations and some reflections on account of the priceless and excellently edited CIRCULAR. The increase of the trade and commerce of the United States, consequent on the increase of population, manufactories and agriculture, and the universal confidence reposed in our political institution, have called into requisition renewed efforts in every department of science and literature. About twenty years ago, when THE CIRCULAR was first published, journals of this kind were not as common nor so much in

demand as they are at present. From year to year THE CIRCULAR improved and has accomplished the highest expectations of the most scrupulous subscribers. Great exertions have been made and are still continued by its present editors, to render a practical as well as theoretical knowledge of the science in the jewelry trade attainable by study and instructions. THE CIRCULAR is scattered throughout all kinds of business, from the largest commercial establishments to the smallest retail shop, from the emporiums of the cities and towns to the remotest trading house on the confines of civilization. Every year THE CIRCULAR is improved, enlarged and even beautified in appearance and print. Every edition brings something new for the importer, the jobber, the watchmaker, the gold and silversmiths, the engraver, the mechanic, the rich and poor. I truly believe that no journal of similar kind as THE CIRCULAR is in existence in the world which is edited with such a great ability, tact and noble heart. Such a system of doing business is admirable and the best recommendation to all tradesmen. This small epistle is respectfully submitted to the subscribers of THE CIRCULAR and my fellow-craftsmen.

Very respectfully yours, HERMAN WERNER.

Ansonia, Conn., January 4, 1888.

A HOROLOGICAL SCHOOL WANTED.

To the Editor of the Jewelers' Circular:

Kindly let me know, at your earliest convenience, if you know of any School of Horology in this country, something like the one at Geneva and Locle, or a school for machinists. I prefer the Horology. I have a son who desires to enter in such school in this country instead of going abroad.

St. Louis, Mo., Dec. 1, 1887.

D. C. J.

To the Editor of The Jewelers' Circular:

Will you kindly inform me if there are any schools for watch-making in the United States, and please give me their names, addresses and where located. I have a son who desires to enter such a school to learn the trade.

Nevada, Mo., Nov. 19, 1887.

M. J.

[The above letters were answered in THE CIRCULAR for January, but were inadvertently left out by the printer.—ED.]

To the Editor of the Jewelers' Circular:

Send me the November number, 1884. I am going to have my CIRCULARS bound and miss above number. I will remit on receipt of same, with price marked on. Have the number on cover.

Livonia Station, N. Y.

J. D. HOWELL.

HOW TO REMOVE GREEN OR PICKLE COAT.

To the Editor of the Jewelers' Circular:

Please inform us in your next issue how to remove green or pickle coat from new or unfinished work.

CONSTANT READER.

To the Editor of the Jewelers' Circular:

Can you send me March number for 1887. Have all the rest except this number. I wish to have them bound.

Yours truly,

W. N. BRATT.

Washington, Ill., January 13, 1888.

To the Editor of the Jewelers' Circular:

The firm of Foster & Co. is dissolved by mutual consent. Mr. Hoskin will continue the business in Rutland, Vermont, and I am obliged to retire for a time on account of my health, after eight years of very pleasant and successful business in this little place. And although not actively connected with the trade, yet I must keep up my love and interest for it by subscribing for your inestimable journal,

and I shall think more than ever of it during my enforced leisure. Wishing you a very prosperous New Year, I remain,

Yours respectfully,

W. F. FOSTER.

Ayer, Mass., January 11, 1888.

To the Editor of the Jewelers' Circular:

Enclosed find the sum of \$3.25 for one year's subscription of THE JEWELERS' CIRCULAR, including the back plates from February to November inclusive, also one binder to hold the same. If any extra postage charge, notify me and I will remit the same. I remain,

Yours respectfully,

F. CLAUSEN.

San Francisco, December 27, 1887.

BACK NUMBERS WANTED.

To the Editor of the Jewelers' Circular:

In your January number I see that "A Venerable Subscriber" is willing to part with some of his back numbers of THE CIRCULAR. In Vol. IX. would like Nos. 1, 2, 3, 4, 6, 7 and 8, of 1878; in Vol. XIII. would like Nos. 3 and 6, of April and July, 1882; in Vol. XI. would like Nos. 3 and 9, of April and October, 1881; In Vol. XIV. would like No. 7, of August, 1883; in Vol. XII. would like No. 12, January, 1882. I enclose money order for \$2.50. Am willing to pay any reasonable price for the papers if you can procure them for me. If there is not enough enclosed, please inform me and will remit. If I can get the above numbers it will make me nearly complete from No. 12, Vol. I. Actions speak more than words, how much I have thought of THE CIRCULAR; will say that No. 12, Vol. I., of THE CIRCULAR was the first paper I saw of the publication. I have some duplicate numbers that I will look up, and if you would like them will send to you.

Respectfully,

L. FITCH.

Effingham, Ill., January 7, 1887.

To the Editor of the Jewelers' Circular:

Please send me the November, 1887, and January, 1888, numbers of THE CIRCULAR. I would like to have the following numbers: October, 1877, January, 1879, February, 1879, August, 1879, and July, 1880, of THE CIRCULAR, to complete a file. Will you please ask for them through THE CIRCULAR if you have not got them?

Very Respectfully,

W. F. A. W.

Winona, Minn.

WANTED, A RECEIPT FOR COLORING.

To the Editor of the Jewelers' Circular:

In one of your issues of 1886, I think the January number, I am not certain, but does not matter, you will be able to trace what I want. It is a receipt for coloring gold jewelry; there was copperas and acetic acid in the mixture; I have lost the journal and can't remember the receipt. If you will re-publish the receipt or send me a written copy I will send you two years' subscription in advance for your valuable journal. Write per return mail, and oblige,

Yours,

E. L. WEISS.

Madoc, Ontario, December 16, 1887.

To the Editor of the Jewelers' Circular:

Mr. Henry D. Morse, who died on the 2d of January, I thought deserved some notice in the JEWELERS' CIRCULAR. I think Mr. Morse was the first to introduce into this country the art of cutting diamonds. I enclose a notice from one of our papers.

Yours truly,

H. GUILD.

Boston, Mass., Jan. 5, 1888.

KIND WORDS.

The Waltham Watch Tool Co. say: "We have received more

good from our advertisements in THE CIRCULAR than from those in all other publications."

Mr. H. H. Robinson, Presque Isle, Me., says: "This is the tenth year I have taken THE CIRCULAR."

F. L. Davies & Bro., of Nashville, Tenn., write: "We cannot get along without THE CIRCULAR."

Mr. J. W. McVine, Crown Point, N. Y., writes: "I cannot keep house without THE CIRCULAR."

Mr. J. B. Blickle, of Rochester, Minn., sends \$2 to renew his subscription, and says: "I would not be without THE CIRCULAR if it cost ten times the amount."

Mr. Chas. H. Bentley, of South Bethlehem, Pa., writes: "I'd feel lost without it."

Palmer, Bachelder & Co., of Boston, say: "Congratulations on the excellence of THE CIRCULAR."

Mr. Joseph Durst, of Foxboro, Mass., writes: "I can't do without it."

Hubbard Bros., of Buffalo, N. Y., say they are "perfectly satisfied that 'tis the best paper published in the interest of the trade."

Mr. W. S. Lydecker, Wamego, Kansas, says: "I couldn't be without it."

Britton Bros., Lindsay, Ontario, write: "The articles by Dr. Bucklin have made THE CIRCULAR invaluable to us."

Fashions in Jewelry

A Lady's Rambles Among the Jewelers

THE opinion very generally prevails that the increased activity which has been so noticeable in the jewelry trade during the past six months will continue right on through the spring season, and that 1888 will prove a fairly remunerative year to everybody concerned.

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NOVELTIES that received patronage during the holiday season, also all lines of standard goods that met with a paying demand, will figure in the spring trade. Indeed, it may be said that the sales made during November and December are generally considered as trustworthy indications of the public's requirements and tastes in matters relating to jewelry and silverware for, at least, the next six months to come.

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A NOTABLE feature, and one which will be hailed everywhere with joy, is the very decided advance ear rings have made of late in the world of fashion. Especial care has been taken to gain information on this point in several directions: 1. By observation of the ladies themselves in the street cars, at the opera, at the theatre and receptions of various kinds. 2. By interviews with manufacturers and retail dealers. 3. By watching advices from abroad. The result of these observations and interviews justify the conclusion that ear rings are worn in larger numbers than before for several years, and the sales in these articles were very much larger during last December than during the holiday season of 1887.

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Not only is this increased activity noticeable in ear rings, but in the ear knobs and screws as well; in fact, it is difficult to say which

of the two styles is the more popular. These ear ornaments, in consequence of this increased demand, are being made in a great variety of designs, which include many quite fanciful patterns.

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AS YET both the ear rings and ear knobs incline to be rather small in size. Often they are merely a small stone set in simple framework of gold; again, they are a small cluster of fine gems, and yet again they are a little gold knot or a gold flower, fly or other diminutive object.

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AMONG what is known as the exclusive fine trade, which means to the jeweler patrons with unlimited means, the cluster ear ring is not so popular as is the solitaire, from the fact that enough money cannot be gotten into the former. The clusters, however, have a good trade of their own, suiting well the requirements of that very large and respectable class who prefer small, fine stones, to single gems of inferior quality.

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THE ball ear rings are still good selling articles. Some very pretty ones seen lately were covered with gold grain work, studded here and there with small gems. Another pretty style seen was a ball formed of small forget-me-nots enameled in natural color. A ball composed of pearls and diamonds, set in a network of gold filigree, makes a very handsome as well as expensive ear ornament. Diamond or gold arrow heads figure as ear screws, so do tiny sapphires or rubies in gold settings. Minute flowers are another form of ear screws quite popular.

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NECKLACES of many styles are now seen in the show cases. These ornaments are no longer confined to the costly gem-set affairs, but are fashionable in gold, silver and enamel.

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THE demand for watches appears to be an unusually active one. Everybody carries them. Those in decorated cases and of irregular form find purchasers among those who seek novelties, but the watch for the popular trade remains a medium-sized one in a plain case or one with a little decoration.

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THE Queen continues to be the leading watch chain for ladies, wear. For men, the double chain is much worn, but what is known as the fancy vest is, if possible, more popular than ever.

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ONE of the newest things is Russian jewelry, which had quite a boom in this city during the holiday season. This jewelry must, in the nature of the case, remain popular so long as the craze for Russian gowns, Russian teas, etc., prevails; indeed, it is almost safe to predict that it will find admirers after the gowns and teas have disappeared. The decoration in this jewelry is very pleasing, consisting of enamel in many colors, so blended as to form a very harmonious and effective whole. The patterns, too, are, many of them, unique. Much of the Russian jewelry which has found its way to this country is of silver; occasional specimens occur, however, in gold.

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RUSSIAN belts seen recently were fastened with clasps simulating

two bears; one enameled in black, the other showing a golden coat. The effect was peculiar and pleasing.

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THIS Russian decoration also appears on odd pieces in silverware, such as vases, card receivers, toilet ornaments and the like.

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ONE of the best selling articles during the holiday season was the flower pin. The all gold ones sold well, as did those enameled in natural colors. Among flower pins that take well are those representing the "heart's ease" as large as nature, in translucent enamel with a diamond dropped in the center.

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THE search for oddities has resulted in the introduction not only of Russian, but of Austrian jewelry, which latter comes mostly in silver; it is also finished in high-colored as well as black enamel. Considerable mosaic jewelry is seen, in form mostly of brooches in Oriental design. Ear rings also appear. This mosaic jewelry is out in both gold and silver settings.

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QUITE new and very effective is tortoise shell jewelry set with diamonds. Brooches, cuff buttons and ear rings are all represented in designs that follow more or less closely the patterns seen in gold and silver jewelry.

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THERE is no question whatever about the popularity of the brooch in New York City. By term brooch is meant, not only the round and oblong pins to which the name was originally attached, but all pins, the width of which is nearly or quite equal to the length, such as a stag's head with diamond eyes, a crescent and star and the like. Some of the new brooches are made with small pendants attached, and are used for the three-fold purpose of neck pin, pendant and hair ornament.

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AS REGARDS the lace pin, it is one of the good selling articles on the road and a favorite at home. For the city trade, however, it is not so often seen now-a-days in the form of a straight bar as it was of old, the shape being modified by some object in the center that breaks the effect of a straight bar and appears to shorten the pin. In illustration of these newer styles of lace pin, may be mentioned one that simulates a gold horn with a horseshoe in the center, or one with three clover leaves in line. Very pretty ones, coming hardly under the head of lace pin or brooch, are those having three diamond swallows perching on a golden branch. The grasshopper, by the by, has been figuring of late as a model for neck pins.

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ONE of the most popular among pins just now is the jeweled safety pin, consisting of the ordinary style of safety pin in gold or silver, and set with one or more jewels. Sometimes in place of the jewels is a floral or other ornamental design in enamel. These pins are exceedingly convenient for fastening laces or flowers to the bodice, or for the more substantial uses for which the safety pin was first designated.

THE subject of scarf pins has been so fully considered in recent numbers of THE CIRCULAR, that it is hardly necessary to say more in regard to these popular ornaments than that they remain as fashionable as ever, and are out in every conceivable pattern. There remains quite a fancy for heads of animals, as a stag's head, a dog's head or a horse's head seen through a gem-set horseshoe. Tiny daggers and swords, a drum major's stick and miniature squirrels are all simulated in the newer scarf pins.

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THERE is little to be said that is new on the subject of finger rings. Small seal rings are much affected by men who are also wearing two or more rings on one hand, as a gem-set ring and a fancy ring in gold or gold and platinum.

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THE Marquise ring has gained favor among the ladies, and is very popular when composed of small but fine diamonds. From London comes what is called the bangle ring, which consists of a gold hoop that nearly meets on top of the finger, either end being set with a gem, usually a ruby or brilliant. Of English origin, too, is the horseshoe ring, which, as the name indicates, has its gem-setting in the form of a horseshoe. A very effective ring seen, was a plain gold band widening slightly at the top and set with five fine pearls, graduated as regards the size, the largest one being in the center. Quite a popular ring is what is termed the diamond half-hoop ring, set with diamonds half way round.

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WHILE some of the new bracelets are very light and delicate in construction, the tendency is to heavier and more solid workmanship in these ornaments. The gold curb chain bracelet is a popular sort. A bracelet out for the holidays was formed of two strands of gold rope tied in the center, so as to present the figures 88. A striking ornament seen consisted of a bracelet composed of gold horseshoes united by little chains, the nails in the shoes being represented by small brilliants.

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THERE appears no diminution in the favor shown to bangles of all descriptions. Some of the newer of these are formed of a single gold or silver wire ornamented with a pearl horseshoe, a diamond fox head or two little diamond birds.

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THE popularity gained by the girdles which Mlle. Sara Bernhardt had the credit of introducing, has doubtless inspired the French jewelers to push the "La Tosca" bracelet recently introduced by this famous actress in her new play of that name. The original "La Tosca" bracelet is of matted gold, covered with a flexible applique. The bracelet is further enriched by three jewels representing the French national colors. This bracelet has been reproduced in silver with some modifications, and will doubtless soon find its way to this country.

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SILVER chatelaines are in big demand. An octopus, an elephant's head and the gnarled roots of a tree are numbered with objects that serve as models

ORNAMENTS for the hair continue fashionable, and are out, if possible, in a greater diversity of style than ever before since their introduction. Numbered with decided novelties in this direction are gold or tortoise shell ornaments in the form of a feather and edged with tiny brilliants. Gold and silver arrows set with pearls, are also numbered with the newer hair ornaments. In some of these arrows, which, by the by, also figure as brooches, are copied the veritable Indian arrows and classed among the so-called Indian jewelry. Tortoise shell hair pins set with diamonds are also new. Gem-set horseshoes, stars and butterflies, remain as fashionable as ever, not only for pendants and brooches, but as ornaments for the hair. The little tortoise shell side combs with jeweled tops, described some time ago in THE CIRCULAR, have proven a success and are worn by ladies of all ages, elderly ones fastening their puffs and curls in place at the sides of the face, while younger ones place them wherever the hair appears to need an ornament. These little flat combs are only about three inches long, but make very effective ornaments with their sparkling line of brilliants or rubies, as the case chances to be.

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WHAT has been previously said of cuff buttons holds true at the present date. In New York society the preference is given by men to the linked button, but elsewhere, it appears from all that can be learned, that the single button and links run a neck-to-neck race for favor. Ladies, almost without exception, prefer the single button, which, by the way, is being made now in somewhat more fanciful patterns than heretofore. The flat knot pattern, made of gold and platinum, described last month, appears to be taking very well. Numbered with new things in cuff buttons, are those having a bright finished center surrounded with a carved border. These buttons come both in round and oblong shapes, with or without a gem in the center. Occasionally the central part is of platinum with a gold border, and sometimes this order is reversed.

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THE increased demand noticed last month for garters with decorated clasps has resulted in some very beautiful patterns. Some of these are very costly, being of gold and set with gems. Others are finely enameled and some show etched designs on the bright finished surfaces.

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OLD designs still continued in the newer jewelry, are the *fleur-de-lis*, the trefoil, shamrock, four-leaved clover, daisy, pansy, violet, crescent, star and horseshoe.

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As is always the case when jewelry is booming, diamonds are in active demand, and the consequence is a great deal of the jewelry now seen is set with these gems. The increased use of diamonds, however, does not appear to offset the popularity of colored gems and fancy stones, but hyacinths, tourmalines, jargoons and beryls continue to please with their effective hues, which afford a wider scope for design and add variety to personal ornaments.

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COUNTED among decidedly expensive practical objects, designed for man's use, are miniature brushes with gold handles and tiny pocket combs with gold tops, with which to keep the beard in order.

ELSIE BEE.



President, HENRY HAYES.....Of Wheeler, Parsons & Hayes.
First Vice-President, ROBERT A. JOHNSON.....Of Celluloid Show Case Co.
Second Vice-President, JAMES P. SNOWOf G. & S. Owen & Co.
Third Vice-President, JOSEPH B. BOWDENOf J. B. Bowden & Co.
Fourth Vice-President, CHARLES G. LEWISOf Randel, Baremore & Billings.
Secretary and Treasurer, WILLIAM L. SEXTON.....Of Sexton Bros. & Washburn.

EXECUTIVE COMMITTEE.

GEORGE R. HOWE, *Chairman*.....Of Carter, Sloan & Co.
WM. BARDEL.....Of Heller & Bardel.
J. R. GREASON.....Of J. R. Greason & Co.
GEO. H. HOUGHTON.With Gorham Mfg. Co.
WM. H. JENKS.....With Tiffany & Co.
A. A. JEANNOT.....Of Jeannot & Sheibler.

THE JEWELERS' CIRCULAR is the *exclusive* official paper of the Jewelers' League and has been selected for the publication of all matters of interest pertaining thereto. Letters or inquiries pertinent to its business or purposes, and which might interest the trade or inquirers, will herein be answered. Address *Jewelers' League, Box 3,444, P. O., New York*, or the office of THE CIRCULAR.

At the regular meeting of the Executive Committee, held Friday, January 9, 1888, there were present Chairman Geo. R. Howe, President Hayes, Vice-Presidents Lewis, Snow and Bowden, and Messrs. Greason, Jenks, Jeannot, Bardel, Houghton and Sexton.

There were five changes of beneficiary granted.

Edw. D. Lewis, Oneonta, N. Y., proposed by Ford Bros., and Chas. Sorg, proposed by Wm. Bardel, were admitted to membership.

The Committee will meet again on Thursday, January 12, preparatory to the annual meeting to be held on Tuesday, January 17, at Cooper Union, 4th avenue and 8th street.



ATTLEBORO.

The new year finds the jewelry shops in the Attleboros going at full blast. The anticipated reaction after the holidays has not come, and the prospects are that it will not, at least not for some time, and consequently most of our manufacturing jewelers are feeling quite happy.

Many of THE CIRCULAR's subscribers about here were agreeably surprised upon opening their last number, to find a long letter telling all about the trade in their own town, and no doubt it was read quite thoroughly.

Since my last letter I have visited a large number of the shops in this vicinity, and one and all report a most excellent outlook for the coming season, and are making preparations to meet the demand which they soon hope to see.

I said last month that every year found some of our jewelers enjoying the "beautiful climate of California," and this year will be no exception to the general rule. On the afternoon of January 16, the Raymond excursion party which started out of Boston, included the following jewelers from this vicinity: Mr. John F. Makinson, of W. G. Clarke & Co.; Mr. A. F. Bennett, formerly of Young & Bennett; Mr. D. D. Coddington, formerly of T. I. Smith & Co.; Mr. C. N. Fisher, of E. I. Franklin & Co.; and Mr. F. A. Newell, of Watson, Newell & Co.; as jolly a party as you will often find. They go direct to Cincinnati, then south to New Orleans, and thence through

Texas, New Mexico and Arizona to Los Angeles. They will be gone about four months.

Mr. J. F. Ripley, salesman and junior member of the firm of Watson, Newell & Co., has just returned from a flying trip as far West as Kansas City and St. Louis. There is evidently a good demand for the sleeve and collar button which this firm make, as Mr. Ripley reports one of the most successful trips in his eight years' experience. He was accompanied by Mr. Blake, of Blake & Clafin, who also reports large sales. Mr. Blake was a little sceptical as regards the present boom, and said he thought it would only prove a "little flurry."

Mr. S. O. Bigney, of the firm of Marsh & Bigney, reports large orders, and the prospects in the near future of being obliged to run nights. This firm is a live one, always getting out some taking styles of pins.

F. S. Draper & Co. report plenty of work. January 1 this firm discontinued their New York office, and the headquarters are now at the factory. A little item in connection with this firm may be of interest to the trade. The shop here is under the complete management of Miss Annie Meader, a most businesslike lady, who will always be found at her post of duty. I think this is the only jewelry manufactory in the country managed by a woman.

Mr. A. W. Sturdy, one of our most successful jewelers and member of the firm of Sturdy Bros., has just presented the Universalist Church in this town with a \$1,500 pipe organ. This church seems to owe its entire prosperity to the jewelers, as the elegant building in which they now worship was nearly all paid for by the late Charles E. Hayward, the pioneer of the jewelry interest in Attleboro. Mr. Hayward was in the West at the time the building was finished, and he did not live to see the object of his generosity.

Mr. D. H. Smith, who has for many years been in the manufacturing jewelry business, has this month opened a fine undertaking establishment. Mr. Smith is a highly respected citizen, and will probably make a success of his new venture.

ATTLEBORO FALLS

is a little village set in between Attleboro and North Attleboro, and a busy little place it is too.

R. F. Simmons & Co. are located here. They do a large business, and are probably making money fast. Mr. Simmons, the senior member of the firm, is President of the Attleboro Agricultural Association and makes a most efficient officer.

Once in a while our jewelers receive midnight callers who, in the absence of any member of the firm, proceed to entertain themselves. Murphy Bros. received such a visit the other night, and in the morning found they were out just about \$50.

Mr. B. S. Freeman was closed a short time in December, but now is running all right.

NORTH ATTLEBORO.

It is an open question in the minds of many whether Attleboro or North Attleboro does the most business. But it was here that the first shops were started, and I think there is probably more capital invested in the business here than in Attleboro.

Bugbee & Niles, successors to C. E. Smith & Co., took possession of that shop about the first of the month. Mr. Bugbee says they will soon have matters straightened out, and he hopes to do a good business.

E. I. Franklin & Co. are one of the most successful firms in the town. Mr. Franklin is a live man, and always ready to take hold of anything which will prove a benefit to his business.

Healy Bros. is another live firm; they were formerly located in Attleboro Falls, but last year moved their factory where they could have more room.

J. G. Cheever & Co. hadn't much to say in regard to the trade.

They were busy and could only hope for a continuance of the present boom.

A very pleasant little affair took place on the evening of the 12th in the parlors of the Wamsutta House. Mr. Alonzo Bennett, who has just severed his connection with the firm of Young & Bennett, was invited to step into one of the parlors of the hotel. Complying with the request, he was greatly surprised to find quite a number of his former employees gathered in the room; before he could recover from his surprise, the spokesman stepped forward, and, in a few very appropriate words, presented him with a large French pastel likeness of himself elegantly framed. Mr. Bennett was completely overcome with his emotions at this evidence of good will, and could only murmur his thanks for the really valuable gift.

PLAINVILLE

is a little village close by the Attleboros, and its interests are so closely connected with those of Attleboro, that anything in relation to the jewelry trade there would very properly come under this heading.

One of the principal firms in this place is that of Wade, Davis & Co., who make a general line of jewelry; they are quite busy and report good sales.

The Plainville Stock Co. are running about 120 hands and are full of business. Mr. Corey, the manager, is West, and is finding a good supply of orders for their popular line of goods.

Barden, Blake & Joyce are also having their share of the general prosperity.

MENDON.

Attleboro, Mass., January 16, 1888.

Repairing Swiss Watches.



WE NOW propose to give some details concerning the other escapements used in Swiss watches, says Hy. Ganney, for, though it is usual to associate the horizontal escapement with Swiss watches, it is doubtless quite true that they manufacture a larger number of lever and duplex watches than any other country. Great improvements are apparent in their lever watches of late years. . . . The fact that all the actions were jeweled and the levers very long and heavy, almost put it out of the power of the repairer to effect

any alteration. To make the depth of the escapement as light as possible, to secure the greatest amount of vibration or to hammer out the lever, if there is too much play on the banking, was all that could generally be done, as there was a vicious practice of making the lever and roller of the worst possible shape; the guard pin and roller action was with them made by forming the lever into a sharp edge, and the roller also being made with a sharp edge, a constant tendency to cut or stick into each other was observable.

This form has now been pretty generally abolished in favor of the English plan of brass pin and broad roller edge, and they further imitate the English by adopting the brass ratchet wheel; this is a mistake, as the club tooth is a stronger and more correct acting wheel and gives more vibration to the balance, as the escapement can be worked closer with less drop and more freedom, and the friction and action on each pallet are more equal. It would be a matter of little

consequence if one pallet supplied nearly all the impulse so that none is wasted, as equality of impulse is not an element in timing; the best timing escapements—the duplex and chronometer—have the impulse all in one direction, but in the lever we have the locking resistance, which is always in the same ratio as the impulse, and a small impulse being preceded by a strong locking, may cause the watch to stop. Inequality of locking resistance is a very common fault in Swiss levers, the draw on the second or exit pallet being very strong, almost sufficient to prevent the escapement unlocking, whilst the other pallet has no retentive action. With a sound guard action, very little draw is needed to Swiss levers, and if the draw prevents a performance as the oil gets dirty, it can be made less by taking off the corner of the inside locking face with a diamond file and emery polisher, which may be made from two ferrules turned true and of suitable shape, and charging them with diamond dust and emery and revolving them in a lathe; or, with the bow and turns, holding the pallet against them whilst revolving rapidly, a corner may be very rapidly rounded. A pallet maker, of course, would do the job much better, but this class of watches is seldom worth the trouble involved in sending defective parts to a specialist, and the repairer must depend upon his own resources and mother wit; and much of the skill the practical repairer possesses is owing to the abundance of this class of work, as the best work generally needs and will warrant the employment of the special talent used in producing it.

Pallets can be altered considerably by warming them to melt the shellac with which they are fixed in the steel, and may be put closer or wider, deep or shallow, by this means; or the hole may be drawn with a fine file, altered and closed, and, in fact, any alteration may easily be made that a good knowledge of the escapement and experience suggests. Without a good vibration, performance is almost out of the question, and a small vibration that will give good results with an English lever is quite useless with a Swiss, as the escaping angle is generally very large and the balance has to move about sixty degrees until it escapes. There can be no question that a good Swiss lever watch, with the large, light lever and roller and club tooth steel wheel, is a very reliable and durable article.

If there is too much play between the guard point and roller, the steel may be filed away and a hole drilled and a pin put in, English fashion. If that is too much trouble and the steel is soft, a slitting file may be used to cut the steel into the form of a pin, and it may be bent over, or a penknife and hammer will force the steel outward; if the roller is taken off the sharp edge may be removed with advantage, as the edge soon damages and prevents handling it. The steel clams and a hollow punch over the pivot, and a drive with the hammer, is the best way of getting the roller on and off, as they are never fitted well enough to be taken off with ordinary hand pressure. The fine steel clams used for riveting will generally force off a lever roller by putting it in the vise and screwing it up gently. The jaws of the clams pressing the backs of the collet of the staff and roller simultaneously, one of them must move, and it is generally the roller that moves first; but the clams must be thin and regular, tapering at back. I have in use a pair of English clams used by my grandfather for fifty years, and they will take off any roller without fail. I have another pair of clams of the same size, but of common modern make, which destroy every staff on which the experiment is tried, so it is necessary to discriminate in using such tool. Others use pliers and sliding tongs of brass, or with brass riveted or soldered on the ends, to remove the roller. Every repairer should have these brass-nosed pliers, as they hold the roller without damage, while rough roller edges cause very troublesome stoppages of the balance occasionally.

The amount of vibration may often be considerably increased by closing the lever notch, as all unnecessary shake there is wasted power, and the hammer is generally used to close the lever notch if the steel is not hard. As the action of the roller and lever are in the sink of the plate and cannot be viewed direct, considerable judgment and observation is necessary to see and understand them, as nothing is so good as a direct view in a line with the light of a delicate action,

which in this case is impossible. The end shakes of all the escapement parts must be carefully made alike, or the ruby pin may get on the lever notch or the guard action under the roller. A lever and roller may foul in some positions, as, owing to the great length of lever, ordinary side shake of pallet pivots allow of considerable motion of the lever end. It will hardly be possible to poise the lever, so the guard action must be perfectly sound.

The action of the wheel and pallet may be as shallow as possible; if put as deep as is usual in English watches the watch will soon stop, as the long lever and roller give advantages in preventing a recoil of the pallets and allow of a lighter depth, which is necessary to prevent waste of force in unnecessary motion of heavy levers and hard lockings. More play of the guard action is necessary in the Swiss lever movement, as the action is more coarse and magnified; the tightness and accuracy usual in the English lever and roller action is not necessary, and would be fatal if applied, as side shake and freedom must be increased in proportion as the increase in size and roller, but perfect soundness must be obtained.

Defective Rate of Anchor Escapement.



CORRESPONDENT in the *Deutsche Uhrmacher Zeitung* asks: "Where can I look for the defect in an anchor escapement when it goes much worse in a hanging position and has an 'unclean' vibration in all positions? Its conditions are as follows: The anchor draws well, the performance falls exactly on repose, the roller jewel has, in the horns of the fork, only as much shake as, say, a pivot has in a jewel hole. The fork also has only just sufficient shake between roller and hand; there are no scrapings anywhere. The balance spring lies well concentric and no cap jewel is loose."

To which he received a number of "probables." We select the following: "The defect mentioned by you is occasioned, probably, by the insufficiency of shake in all the parts of the escapement. It is altogether a wrong idea to place an ordinary anchor escapement everywhere as close as possible, as close as is required for a fine watch. I have several times obtained good results and a uniform and large vibration by giving more shake.

"In the examination of the escapement I proceed as follows: After I have taken out the balance and barrel, I press with the left forefinger against the center wheel, and pass through the scape wheel by placing a blunt-pointed pegwood in the fork, and with gentle pressure press toward the arbor. Should the motion in general fall a little too much upon repose, and the repairer does not wish to make it shallower, it is actually no great objection; it is only necessary to observe principally that each single tooth, which, in ordinary watches are of unequal length, drops off sufficiently, and the fork makes then still a minute trifle of motion before it leans against the banking pin. I then mount again the balance, test the shake of the impulse pin in the fork, which must also not be too scant. The latter must be well polished within. I next mount the barrel, wind the spring a few turns, and inspect the shake of the pivot of the fork between roller and sides, and at this spot is generally the error to be found. If the movement is held horizontally, and there is sufficient shake in this position, it will be found that when it is held vertically there is far less, and often none at all, because it has been absorbed by the width of the balance jewel holes, and sometimes because the roller is untrue and the watch will consequently lose in rate in this position, and in some cases stop altogether. It is self-evident that the repairer must examine whether the impulse pin in its entrance into the fork does not butt against one or the other horn, as that it does not lay itself full into the fork, or that other scrapings or pinchings occur. When an escapement has been corrected in this manner,

the balance will vibrate at least one full turn. Watchmakers know well that this escapement requires much practice in repairing.

"I would also add, that personally I am in favor of placing a minute trifle of oil with a pointed pegwood into the (steel) fork. It is true that scientific watchmakers prohibit it, but then they are all not agreed on this point."

Another correspondent says, that if the anchor escapement is otherwise correct in all its parts, and nevertheless the balance vibration becomes smaller in hanging, and that the going of the watch is not clear, the fault may be due to the jewel holes of the escapement. Examine them with a strong magnifier, and if its sides are rough, polish them with diamond dust and oil.

The impure sound of the vibration may also be caused by the cap jewels of the balance lying too low; in other words, there may be too much space between caps and jewel holes. If this space has been reduced to the right quantity, it is very possible that the scratching noise may also cease.

How Periodic Crazes of the Medical Profession Affect Skilled Opticians.

[By C. A. BUCKLIN, A. M., M. D., NEW YORK.]



AM induced by several requests to review a few of the past and present crazes which have been introduced into medical science for the purpose of curing functional nervous diseases. Let us admit that in selected cases good may be obtained from any of the methods we are about to describe. What we object to is the building up of statistics from selected cases and publishing them in support of the general adoption of a means for the universal cure of a

certain class of cases when it is only adapted to the relief of special cases of this class. I am thoroughly convinced that it is a moral impossibility for any enthusiast to be thoroughly impartial on the subject of his hobby.

The older members of the profession remember Baker Brown, of England, who had his special theory of functional nervous diseases in women. He stood among the highest of medical scientists, published a book, and had a large following among the profession who thoroughly believed in his views and were ever ready to testify to his universally successful results. Baker Brown believed that he had found the cause of all functional nervous disorders in females, which cause was a diseased condition of the clitoris, the irritability of which caused the woman to become an habitual masturbator. The nervous exhaustion resulting from a continuation of this habit so undermined the nervous system as to cause all forms of functional nervous diseases. He concluded that the removal of the clitoris would obviate these difficulties. Having practised this operation for some time he argued if the removal of a hypothetical cause relieves the difficulties, the proof is convincing that the hypothetical cause is the real one.

Baker Brown removed the clitoris from thousands of English women, and collected immense fees from their husbands for having robbed their wives of the ability to enjoy sexual intercourse. A gentleman, discovering that there was a most striking change in his wife after treatment by Baker Brown, decided to thoroughly investigate the cause of this change. Several experts were called upon for an opinion. The opinion was unanimous that the woman had been horribly mutilated. A prosecution followed, and this periodic craze,

which had been a curse to the public and the profession, was completely exploded. Baker Brown was sincere in his belief, and probably correct in certain cases.

No. 2. Most members of the profession remember, a few years ago, how many females were suffering from stenosis of the cervix, and how long and deep the cuts were made. No man was considered a gynecologist until he had thoroughly lacerated a hundred cervixes, and to-day the youngest gynecologist is sewing up the lacerations that the older men made, believing that no part of the uterine tissue can be exposed without a healthy covering of mucous membrane without subjecting the sufferer to all kinds of reflex troubles.

No. 3. Another class of men have come up upon whom the female ovary has the same effect as red flannel has upon an infuriated bull. This class of men remove ovaries from their female patients, which are quite as healthy as the ovaries of their wives, mothers, and sisters. When the removal of both ovaries fails to cure an epilepsy they sigh that a woman has no more ovaries to remove. This class of men sincerely regret that men have no ovaries to remove, and would readily be induced to remove the testicles for any functional nervous disease if the men valued them as lightly as women value their ovaries. It is not an uncommon thing to see a specialist open the abdomen of a woman suffering from tubercular peritonitis in search of the tumor which swells the abdomen. To open a tympanitic abdomen in such a case would cause Alonzo Clark to turn over in his grave.

For men suffering from functional nervous diseases a longitudinal section of the entire penis has been proposed, and the operation has found many warm supporters. The section is to be made after the manner of an internal urethrotomy. Great care must be observed not to make the section so complete that the cut throughout its length shows from outside, in which case the curvature of the penis upward is so marked when cicatrization takes place that the future usefulness of the organ is greatly compromised. The above-mentioned cases being quite familiar to the thinking members of the profession in America, most of whom have already severely burned their fingers with some of them, we proceed to the consideration of a new means of curing the few cases of epilepsy and other functional diseases which the above described highly curative measures have failed to relieve. This means, I believe, has more in its favor than any of the above described methods of treatment. The profession know that a most frequent cause of *chronic headache, nausea, and dizziness* in some faulty refractive condition of the eye or muscular deficiency in the ocular or ciliary muscles. This fact has been known for a quarter of a century, and is becoming more fully appreciated daily. A work is now presented to the profession entitled: "Functional Nervous Diseases," by George T. Stevens, M. D., Ph.D.

The author claims as the result of observation in twenty-six hundred and ninety-two cases of nervous diseases that the nervous exhaustion occasioned by difficulties attending the function of accommodating and adjusting the eyes in the act of vision, or irritations arising from the nerves involved in these processes, are among the most prolific sources of nervous disturbances, and more frequently than any other conditions constitute a neuropathic tendency. He believes that the above causes of nervous conditions are the pre-eminent, but admits they are not the exclusive causes.

The author publishes a table of one hundred cases of nervous disease, containing records of the disease of the patient; the refractive error found; the result of the treatment and a history of the family. These hundred cases were sufficiently accommodating to have refractive errors, the correction of which cured the nervous disease in every case where the results of the treatment were reported.*

Another thing which must not be forgotten in considering this remarkable production. It received from l'Academie Royal de Medecine, of Belgium, the highest honor, which it well deserved, providing

* Note.—This is a most accommodating lot of patients.

it can be proven in the future that there is an almost constant relation existing between epilepsy and ocular defects, the correction of which will cure epilepsy. Allowing for the utter impossibility of any enthusiast to write upon his hobby in an impartial manner, if one-half of the claims made in this work are true, it is the most remarkable contribution to medical science of the age.

The author publishes illustrative cases of headache, epilepsy and chorea, insanity, naming in several instances the family physicians of the patients treated, and also giving photographs before and after treatment, of which he says:

"The photographs show more than I am able to tell, but even they do not convey a perfect idea of the wonderful revolutions which had taken place in the mental conditions of the boy in eighteen days." The author is a gentleman and a friend, and the profession believe him to be perfectly sincere. I have given as fully as space permits the strong arguments which favor his theories. Having no collected statistics, I am obliged to use those he has collected in forming an opinion. My conclusion, after a careful examination of the subject, is that the only difference between the author's views and those of any careful ophthalmologist who examines the refractive and muscular conditions of the eyes of every person who consults him, is that the author finds refractive, accommodative or muscular errors in all cases of nervous disease.† He believes that the commonest cause of epilepsy and chorea are ocular defects, the correction of which will cure the case.

Other ophthalmologists find ocular defects a very frequent cause of headache, nausea and dizziness, but not infrequently find such cases which have no ocular defects. They do not find cases of undoubted epilepsy which are cured by the correction of an ocular defect, and when they find cases which resemble epilepsy they usually find an hysterical element, which causes them to reject the case from the list of epileptic patients treated.

We have been very free thus far to admit the claims of the author and acknowledge the facts which support his theories. Now, let us criticise in the same free manner the means the author uses to convince us of the correctness of his opinions.

1. He has read and admires the contributions of Landolt, of Paris; he must have found them faultless to have admired them.

I find Landolt has written a book in 1886 which, in all its practical conclusions drawn from clinical experience, is decidedly inferior to Douders' work, which appeared in 1864. Landolt's work is not for a moment to be compared with Mauthner's work, published in 1876. If a man can't improve on the literature of a given subject he better not contribute to it.

Landolt misquotes authors, draws a conclusion from his false quotation, acknowledges he does not understand the etiology of the subject discussed, and then commences a criticism of the false quotation he has made. If our author has read Landolt and failed to discover these facts, it reflects a bad light on the acuteness of his powers of observation. This fact alone makes me suspicious that a prevailing incorrectness will be found in his work as we proceed to examine it.

2. Page 7 of his introduction, he gives Duoder credit of discovering "hypermetropia," another little inaccuracy that makes me suspicious that he is capable of making other blunders.

All Douders knew of hypermetropia he stole from the table of Jæger during a visit to Vienna.

Dr. Carl Stellwag had written an essay on this subject and given it to Jæger to read. Douders, during this visit, obtained these views from Jæger and appropriated them.

The next point I desire to call the attention of my readers to is the photographs illustrating patients who have had various nervous diseases; they illustrate before and after treatment. Two portraits—page 46—one shows the child June 8, 1883; the other, June 12, after the operation which relieved an insufficiency of the external rectus. The author states that "it is needless to tell one who

examines these two pictures that the change was marvellous." I agree that the change is marvellous.

Before operation the photograph is so printed that the child appears to be a decided brunette, four days after operation she appears as a blonde.

The following will illustrate how great the change was in the individual after the operation of tenotomy had been performed.

Before Operation.	After Operation.
Brunette.	Blonde.
Vertical measurement of head, 1 3-4 inches. Breadth of head, 1 3-8 inches.	Vertical measurement of head, 2 inches. Breadth of head, 1 1-2 inches. Great care used in printing.
Badly printed.	After operation the child appears free from fear.
Before operation the child appears as if she expected both eyes were to be taken out.	

The change is marvelous, but it appears to me to have been produced principally by optical changes within the control of the photographer; that part of the change in the photograph which was produced by an alteration in the ocular conditions is not easily discovered.

All the physicians referred to confirm the statements made regarding their particular case of chorea or epilepsy, which must be remembered as a strong argument in favor of the truth of these apparently wonderful discoveries.

Space will not allow me to review more than the striking photographs. Let us now consider *Plate No. 2*, which illustrates a case of chorea before and after treatment by the author.

Before Treatment.	After Treatment.
Vertical measurement of head, 1 7-8 inches. Horizontal measurement of head, 1 3-8 inches, allowing for constant movement of head in lateral directions.	Vertical measurement of head, 1 5-8. Horizontal measurement, 1 1-8 inches. Picture printed distinctly.
Picture printed as badly as possible.	

From the above our author makes a brave assertion, namely:

"Chorea is emphatically a nervous trouble, depending upon ocular conditions." I here again claim that the difference in the appearance of the patient before and after treatment, is largely due to optical conditions which are under the control of the photographer, and are not due, as represented, to a change in the ocular condition of the patient.

We will now consider *Plate 3*, which represents a most distressing case of epilepsy in the minds of the author and the family physician. The picture presents to my mind, among other things, the purest kind of a picture of hysteria:

Before Treatment.	After Treatment.
Picture so badly printed as to be unrecognizable.	Picture printed perfectly.

The distortion of the measurements of the photograph before and after treatment are not sufficient to require criticism.

Plate 4 represents an individual suffering indescribably from epilepsy and chorea, another striking picture to my mind of an "hysterical crank."

Before Treatment.	After Treatment.
Vertical measurements of head sufficiently alike not to merit criticism. Horizontal measurement of head, 1 3-8 inches. Picture printed with striking indistinctness.	Horizontal measurement of head, 1 inch. Picture printed with striking distinctness.

It is a strange photographic lens which will, without any intention on the part of the operator, distort the horizontal measurements of a head three-eighths of an inch without disturbing its vertical measurements. This piece of art would be an interesting subject for photographers to discuss. We have no space.

Plate 5 represents a most remarkable change in the condition of a young man, who, during a period of unusual religious excitement, became unquestionably insane. The case is vouched for by Dr. P. M. Wise, Superintendent of the Willard Asylum for the Insane.

Before Treatment.	After Treatment.
Mouth open. Picture badly printed.	Mouth closed. Picture badly printed. Necktie changed.

The change is marvelous to those who saw the boy possibly, but the changes shown in the photograph are not so startling. I would like to see the effect of a live crab upon such a boy when allowed to take hold of some other than an ocular muscle. I think if he could

† Note.—See his statistics.

be persuaded that the pain experienced was due to an operation performed for the cure of his mental condition, that the change in his countenance would be permanently striking before he had the operation repeated. I have cured a great many cases of what was called epilepsy by a mixture of capsicum, rubrum and syrup, of sufficient strength to produce sensations similar to those which would be experienced if a moderately heated piece of coal were placed in the mouth.

When I could so thoroughly convince the family that the fits were sufficiently dangerous to require an immediate and forcible administration of the remedy, I frequently succeeded in curing very distressing nervous diseases.

Supplement. This contains general directions to medical practitioners as to the methods necessary to examine the eye for errors of refraction, accommodation and muscular defects. In these directions I see much to explain why the author finds errors of refraction so frequently present in nervous disease.

If we follow strictly the method practiced, the only individuals who would not show errors of refraction of sufficient importance to figure in the author's statistics, would be those who are a $\frac{1}{2}$ myopic or have slightly reduced acuteness of vision. Let us examine my eyes. Many suppose me to suffer from slight mental eccentricities, and see how quickly we can establish the connection between my eccentricities and an ocular defect. The author examined my eyes. I was placed at twenty feet from Snellen's test type, and could with difficulty distinguish the last line of letters through convex No. 20. I was therefore considered as having at least one-twentieth of hyperopia, which in his statistics would be ample to account for any amount of mental eccentricity I might display. The fact is, I can read those letters in a clear light at forty feet. Now, I think it will take considerable convex lens to magnify the test letters to the point of indistinctness if I am only twenty feet away from them. If the letters were the finest I possibly could distinguish at twenty feet, it would require but the slightest magnification to make them indistinct.

The author draws very stringent rules regarding muscular defects, and I do not doubt his ability to convict all persons of having a muscular defect who have not been convicted of having an error of refraction by this faulty means of testing. He introduces several terms in connection with muscular insufficiencies. I have heard specialists say that the author deserved a monument on account of his method of performing tenotomy. The students of Arlt will be astonished at this.† The methods of performing tenotomy which the author employs are old, and recommended and described by Arlt. The author appears to have been more successful than others in regulating the dose of tenotomy.

In opposition to the over-confident physicians who vouch for the statement that certain cases of epilepsy have been cured, I would state that the New York Neurological Society, ever anxious to benefit epileptic patients, appointed a commission to observe the results of the treatment of such cases of epilepsy as their members should furnish for treatment by this peculiar means. The commission was appointed months ago, but has not as yet been able to make a favorable report on a single case treated. They have observed an effect on the action of ocular muscles produced by this peculiar form of tenotomy, but are not as yet in a position to state that the effects obtained are permanent when the tendon of the muscle is not entirely divided.

The views of the author are extreme, but truthful to a certain point. I do not believe that epilepsy will be cured by the treatment of ocular defects. I do not think the conclusions which the author draws from his own observation are conclusions which the average thinking man would draw. I do think that the claims of the author has caused specialists in this city to be more particular in examining the condition of the ocular muscles.

The school of optics was never in a more flourishing condition. The members of the class which commenced January 7 are as fol-

lows: Wm. F. Cushman, not located; Charles M. Cushman, Burlington, Vt.; Geo. R. Hodsdon, Rochester, N. H.; Eugene E. Covell, Brockton, Mass.; Walter F. Robbins, Skowhegan, Me.; Harry P. Lowell, Augusta, Me.; Fred S. Neff, Nashua, N. H.; E. A. Gage, Haverhill, Mass.; David Clark, Reading, Pa.; Willis G. Mead, Salamanca, N. Y.; Delbert E. Shoup, Canton, Ohio.

The members of the class commencing January 24 are as follows: Jules Wendell, Oswego, N. Y.; P. J. Smith, Cumberland, Md.; A. J. Hope, East Orange, N. J.; E. J. Faust, Allentown, Pa.; Francis J. Kepling, not located; J. D. Howell, Livonia Station; G. W. Goodhue, Madras, Me.; T. W. Metcalfe, Baltimore, Md.; J. B. Farrington, Woonsocket, R. I.; C. L. Haskins, Saratoga, N. Y.

Classes will form February 8 and February 24. Those desiring to take advantage of the opportunities offered by the school will save trouble and disappointment by announcing their intentions as early as possible.



LONDON, January 19th, 1888.

Since I wrote you, very little has been done by our manufacturing wholesale houses. Taken throughout, December proved a very dull month, and manufacturing jewelers suffered great disappointments. As a rule any quietude experienced in preceding months has been partially atoned for by an impetus just before Christmas, but there has really been very little extra Christmas trade this season.

Now that the New Year has arrived, however, business has assumed a more promising tone. The indications of an improved market are more hopeful than any experienced during the past year. Trade generally throughout the country is looking up. There are signs of activity in our industries which, I trust, will be fully realized.

Our English watch trade has passed through—or shall I say is passing through?—an unprecedented crisis. The doubts as to the special clauses of the Merchandise Marks Act have seriously interfered with business. This interference has been greatly enhanced by the delay in the publication of the order in Council respecting the Hall marking of watch cases. The New Act came into force on the first inst., nominally, but practically on the second, and is a most important one. The provisions of it are doubtless known to your readers, but in case they are not, I send you herewith extracts from the official announcements in the *London Gazette*, so that you may publish such portions of them as you think interesting. I am aware that the provisions of this "Merchandise Marks Act" affect our factors here principally, but it may be useful for your manufacturers to be acquainted with them also. There has been, and is, much discussion on the probable working of this enactment as far as it concerns the watch trade, but any details of this discussion would not be likely to interest your readers much. I will content myself, therefore, by saying that this legislation is intended to prevent wilful misrepresentation in the importation of foreign made goods. It applies to all classes of imports and not to those of our industry alone.

It may have occurred to some that the Act is intended to prevent foreign competition. This is not so. If this was the intention I do not see how it could possibly be the effect. The Act, if properly carried out, will protect the British consumer against fraudulent mis-statements as well as to watches as to other imports, and it probably will put our manufacturers on their mettle to produce better and cheaper watches than their competitors abroad.

The Council of the Horological Institute, Northampton Square,

† See Graefe und Saemisch, vol. iii, p. 399. See Landolt, p. 403.

Clerkenwell, E. C., offer a prize of seven guineas for the best, and a prize of three guineas for the second best practical essay on "Modern Methods of Turning, Drilling, Boring, Pivoting and Polishing, applicable to Watch Work, by means of modern appliances and either the hand or foot wheel." Papers must reach the Secretary at the address named by Monday, the 30th day of April next. I cannot say at present whether foreigners may compete for these prizes or not, but I will mention the matter in my next.

The attention which is now being paid to Technical Education will have a most beneficial influence on the future artizans in the watch making and all other skilled industries.

Considerable excitement has been manifested lately in London and the provinces over the discovery of the South African mines. It is well known that members of our special industries have entered into stock exchange speculations over the mining shares to an extent that has never been witnessed in the trades before. I have heard of some large profits being made already, and I suppose the large losses which invariably attend abnormal speculation will be reported in due time. The extravagant accounts that have appeared in some of our daily newspapers have created groundless fears in the minds of private owners of diamonds. To be told that upwards of six tons of rough diamonds had been taken out of these mines in six years was enough to dishearten the holders of large quantities of diamond jewelry and to lead them to think that the value of their highly prized property must rapidly decrease. Of course those in the trade are able to make the necessary allowance for the quality of the bulk of those six tons. This consists of "common boart," and must form at least three-fourths of the total out-put, and traders can also allow for the large proportion of the remainder that cannot possibly be cut with any profit, but private holders of diamonds cannot make these allowances and are liable to be frightened by an apparent superabundance of what has hitherto been a rarity. They may, however, take comfort from the fact that the fine quality of perfect, white diamond is actually dearer now than it was, and there has not anything occurred yet to lead to the belief that the value of it is likely to depreciate.

Moonstones and sapphires are just now great favorites in London. I am told that sapphires are very scarce and are more rare in that perfect color which gives them their charm than good rubies are. As an instance of what really choice jewels will realize, I may refer to a public sale held last month at the rooms of Messrs. Debenham Starr & Son, in Covent Garden. The following prices were obtained for some of the articles offered: a pair of emerald and brilliant earrings, 201 guineas; a pair of pearl and brilliant earrings, 100 guineas; two brilliant crosses, 170 and 160 guineas respectively; a sapphire brilliant ring, 130 guineas; an emerald ring, five stones, 91 guineas; a sapphire and brilliant pendant, 270 guineas; a brilliant and turquoise brooch and necklette, 151 guineas; a pearl necklace, 1,320 guineas, and another pearl necklace, 410 guineas. The only opportunity I have of seeing a collection of such costly ornaments is at a sale like the one mentioned. Single articles one can frequently see while they are in the hands of the manufacturer, but a group of only ten articles of feminine decoration of the aggregate value of three thousand guineas is by no means an ordinary occurrence, even in a manufactory. I have dwelt longer than I should have done on these expensive luxuries, thinking your readers must be more familiar with them and consequently more interested in them than I am. But I must hurry on to speak of things with which I am better acquainted and which I can see even in the society in which I move. I prefer to write about what I observe in actual use rather than give you an epitome of the contents of our fashionable jewelers' windows or our manufacturers' show rooms. The latter plan would be far easier for me, but it would result in a description (and perhaps a faulty one) of many things I should never see worn, and of many others that would never be worn at all.

That ornaments in silver are becoming more generally worn is beyond question. That *new* silver ornaments are in increasing demand is not so certain. It does not seem so long, and yet I think

it is some seven or eight years since it was not an uncommon thing to see fashionable ladies wearing quite a collection of silver bangles—sometimes as many as eight on each arm. Our English saying, that if you keep an article seven years it is sure to be useful again, is likely to be verified in this case. It is true we do not yet see such a number on one arm, but it is evident that many old treasures are being brought to light again. Steel and silver chatelains are becoming once more fashionable especially in old designs. I am not a *modiste* and do not make any pretensions to understand the mysteries of her art, but it seems to me that some considerable change in the present arrangements of dress must be made before the old style of wearing bracelets can be resumed. Sleeves worn as close to the wrist as they now are, are not adapted for more than two bracelets on each wrist. I do not profess to know how these matters are arranged—whether, in all cases, the fashionable dressmaker cuts her shapes to suit the jewelry her fair clients are expected to wear, or whether the artistic jeweler cunningly adapts his production to suit the fashionable costume, or whether there is a sort of compromise between these autocrats. But this I do know, that by some means there is generally an achieved harmony that I, as an expert in fashionable jewelry, can rarely find fault with.

This year we are to celebrate the silver wedding of the Prince and Princess of Wales, and it is said that on that account silver ornaments will be very much worn. Silver presents to brides and bridegrooms are increasing, and at a recent marriage the bride received a silver feather studded with diamonds. I did not see it myself, and those to whom I am indebted for the information could not tell me the precise use of it.

During the Christmas festivities I saw some pretty and becoming jewelled ornaments, but I feel my ignorance of toilet secrets and nomenclature will not admit of such a description as your readers are entitled to. However, having mentioned the matter, I will venture to say that the present fashion for evening bodices appears to be full sleeves from the elbow to the shoulder, of lace, tulle, or silk crepe. The tulle or other material passes under the arm and is drawn up on the shoulder, while a jewelled ornament surmounts the bow at the top in a very becoming manner. I noticed these pretty ornaments because they were new to me, and I was pleased with them, but what I noticed more particularly and with regret, was the comparatively little jewelry worn by the guests. One or two bangles on the wrist, a small star or two carelessly worked in the costume, and a diamond star in the hair was the most general extent. Where are the gold necklets, locketts and jewelled earrings that used to make our middle-class ball rooms so resplendent? I cannot answer this, but I know they are not worn in public as they used to be. The hard times may have something to do with the changing taste, but I think there are other reasons to be found. In proof of this, at a recent fashionable wedding, graced by the presence of the Heir to the Throne, the bride was presented with a fancy walking stick, richly mounted with silver. This may indicate that walking sticks to be carried by ladies are likely to become more fashionable, but when I say that the bridegroom was your recent visitor, Earl Cairns (Lord Garmoye), it will be understood that the "pressure of the times" was not likely to have influenced his silver gift. What comes under the observation of any one person can hardly be good for a correct impression of prevailing fashions unless that person is wholly given up to fashionable life. And so my personal ideas are subject to correction, and on visiting some manufactories I occasionally get them corrected. For instance, I find that brooches and bracelets also, with moonstone centers, carved in various devices and ornamented with diamonds, are not only very effective, but what is equally interesting to the maker, are just now very salable. Brooches, as violins, banjos and other musical instruments are being sold, along with the apparently always fashionable sporting designs. Of horse-shoes in endless variety and of foxes heads, our sporting world seems never to weary.

Of novelties, some of the most taking are brooches in gold and

silver filigree, set with small brilliants. Another new idea is to wear the figures 88 as ornaments on pins, brooches, bangles and sleeve links. I have not heard that there is any other reason for this demand than the figures of the year itself, though as there does not appear to have been so great a demand for the figures 87 or 86, there is probably some mysterious charm about 88 known only to a select few, of whom, unfortunately, I am not one.

A very large trade has been done in paper-knives and book-markers combined, in silver and also in gold. These have assumed a most interesting variety of shapes, including amongst others, swords, trowels, knives, etc., with handles of ivory, silver and mother-of-pearl. Larger knives of ivory and tortoise shell, with elegantly embossed silver handles, have also been in request as presents. But it occurred to some bright genius to produce a cheap imitation of the silver or gold combination, and now you cannot walk down cheapside without having a penny "paper-knife and book-marker" pressed on your notice by a dozen eager street venders. The moment any novelty is imitated in penny articles the sale of the original, no matter how elegant or useful, is spoilt. Our industry suffers more than any other from the effects of cheap imitations. The paper-knife is only one out of many instances of the injury caused. It seems to me that in self protection, manufacturers of best goods who, after all, are the supporters of the stampers and die sinkers, should decline business with such houses as encourage these cheap piracies. In a free country like ours other stampers would be found, but the production of the cheap commodities would necessarily be delayed and there would be a chance for a good run with the costly original.

Enameled Jubilee coins are still worn as brooches, pins and solitaires, and as the issue of some of the impressions will not be continued, they are likely to become increasingly valuable. I know one jeweler who secured as many sets as he could as soon as it was known some alteration was to be made, and he is simply keeping them in his safe until they acquire the fancy value that is sure to be theirs. In connection with this particular use for coins, Evans & Brown, of Birmingham, have brought out and patented "The Combination Eclipse Brooch," which is not only arranged to hold these coins, but is equally suitable for portrait, device in hair or any similar ornament. The primary object of this arrangement was that a coin might be worn in the manner of an ordinary brooch. Evans & Brown have effected this object by means of a spring arrangement. A coin is placed on the front of the brooch, the spring pressure from the back and the support of the ornamentation at the front holding the coin securely in its place. The ornament is not only a perfect coin holder, but when the coin is removed its character as a brooch is not destroyed. If there is any truth in the fickleness sometimes attributed to the ladies (but I do not think there is), this brooch, capable of being used in four distinct ways, must possess special attractions for them. While speaking of brooches, I may mention among the novelties of the new year a very striking neck ornament. It is a brooch formed by two crescents, about an inch and a quarter apart, set with garnets, while a very narrow gold ribbon, ornamented with diamonds, runs through them and is looped over their sides. The extremities of the ribbon fall at equal lengths, and from them are suspended by a thin, golden web, one and sometimes two large brilliants, their suspension causing them to scintillate with great effect on the least movement of the wearer.

I must not trespass further on your space this month. Before my next letter I hope the expected improvement in our own and all other industries may have fairly commenced, and the present year may be a happy and prosperous one for the craftsmen and all others connected with the jewelry trade, both in your country and ours.

VIGILANT.

BIRMINGHAM, January 7, 1888.

The outlook for British trade for the ensuing year is better than it has been for a long time past. The rise in the price of metals, although to some extent caused by speculators, is to a great extent

warranted by the extra demand which has been slowly increasing for several months; as a consequence of this the prices of all hardware is rising proportionately. The Christmas trade among jewelers has been better than we have had since 1883. In consequence of the badness of trade during the last three years, it has been the custom of dealers to offer large parcels of jewelry to their customers on approbation, and in many cases a retailer has had valuable parcels from several wholesale houses, but this time the requests from the retailers for parcels of goods on approbation to select from for their own stock have been so numerous, that I do not think a single wholesale house has sent a parcel, unless requested to do so by the retailer. The fashion for mosaic jewelry still continues, and the makers of it report that from present appearances it will last some months. There is no doubt that they intend to do all possible to keep this branch of trade going as long as possible, for I see it is being judiciously advertized in the leading fashionable journals and all the retailers have an artistically printed card in their windows advertising their stock of mosaic goods and calling attention to their pretty designs. Steel jewelry is being very much worn this Christmas, especially as ornaments for the hair, both as combs and bands. Unfortunately the French have always beaten us in making these goods; several attempts have been made here to make them, and one enterprising man did succeed in doing so, but when the boxes in which he had sent his goods out were opened it was found that through some fault in the making they had all rusted; as a consequence the maker had to take them back, and lost several hundred pounds by the transaction. Another attempt is now being made to wrest this trade out of the hands of the French. I saw the first samples yesterday and was able to compare them with the French made ones. I found they were equal to the best French ones in finish, and rather lower (about 10 per cent.) in price; some of the designs were more suitable to English trade than those we get from France, and as there were evidently sufficient materials there to make up any number of patterns, there is no doubt they will be made to suit all the markets of the world.

By the "The Merchandise Marks Act," passed in the last session of parliament, all cases which are Hall marked here must have English movements placed in them or have some mark placed in them by the assay office showing that the watch is of foreign make. This has already had a good effect on the watch trade and most makers are full of orders. By the same Act, all jewelry having any mark, either on the goods themselves or any covering, label or other thing, in or with which the goods are sold, must be of the full quality denoted by that mark. It has been customary to mark 8 ct. gold as 9 ct., and 13 ct. gold as 15 ct., but in future this will be stopped. The first prosecution under the act took place in our police court here last week; being the first one the magistrate has taken a week to consult with his superiors, and delivers judgment on Tuesday next.

As it has been the custom of other nations to do the same, and even to make greater distinctions between the actual and the marked qualities of the goods, there is a clause specially inserted in the act for shippers, viz.: "That the vendor shall be deemed to warrant the genuineness of any mark applied to goods, unless the contrary is expressed in some writing signed by or on behalf of the vendor, and delivered at the time of the sale and accepted by the vendee."

SOLITAIRE.

Obituary.

BENJAMIN S. CLARK.

Benjamin S. Clark, of Philadelphia, a well-known jeweler, who for half a century carried on business at the same stand on Market street in that city, died recently of an affection of the kidneys. He was born in March, 1817, and when 16 years of age was apprenticed to William Jones, dentist and watchmaker. When he served out his

apprenticeship he bought out his employer, and has continued the business ever since. He never achieved great wealth, but in business, society, politics and religion, he was noted for his honesty and integrity. He leaves a wife and five children.

HENRY D. MORSE.

Henry D. Morse, the pioneer of the diamond cutting art in this country, died at his home at Jamaica Plain, Boston, last month, at the age of 62. In early life he learned the engraver's trade and afterward became a jeweler. He turned his attention to diamond cutting in 1861, shortly after the great yield of the South African diamond fields had been disclosed. Mr. B. S. Pray, of Boston, was then engaged in the African trade, and brought some rough stones to this country with the idea of competing with foreign countries. Mr. Morse became associated with Mr. Pray, and with the former's skill and the latter's money, the business of diamond cutting was a reality in America before the year was ended. The undertaking was a bold one, and the importers and dealers in precious stones all over the country looked upon the experimental industry with distrust and alarm. The business was started under the name of the Morse Diamond Cutting Company, Mr. Morse superintending all the work. It was necessary to employ Dutch experts at first in the work of cutting and polishing, and whenever they were secured they maintained the same secrecy respecting their art as in their own country, and the same dictatorial spirit towards their employers and the world in general. Mr. Morse learned the secrets of the art and taught it to American boys surreptitiously in an adjoining suburb, and when the foreigners struck Mr. Morse was ready to fill their places with hands, who, together with himself, were enabled to continue the business without any serious interruption.

In the year 1869 Mr. Morse established his fame as the great diamond cutter of his time, by his skill in the case of a 50-karat stone found in Manchester, nearly opposite Richmond, Va. Lapidaries who worked at it in the rough expressed the opinion that it would be almost impossible to obtain a first-water stone of any size whatever from the original gem, but that it would be better to cut it into smaller fragmentary crystals. Mr. Morse was interested in the work of cutting it, and by skilful and adroit manipulation and study of the laws of light and geometrical relations, he produced one of the most brilliant 12 karat diamonds. Mr. Morse also invented a cutting and polishing machine, which did away in a great measure with the tediousness and inaccuracy of the old manual process. The firm of Crosby, Morse & Foss, jewelers and diamond cutters, was formed, but in 1875 the firm dissolved, and Mr. Morse established himself as a dealer in diamonds and gems and diamond cutter. Last year Mr. Morse engaged in business again with his old partner, Mr. C. D. Foss, under the firm name of H. D. Morse & C. D. Foss.

The death of Mr. Morse caused deep regret among the entire trade throughout the country. Among his personal friends he was highly esteemed, and to the trade he was a benefactor. He started in the diamond cutting business with the idea that diamonds should be cut scientifically to bring out their beauties to the best advantage. The result of his work is seen in the fact that the cutting of all fine stones is now subjected to the most rigid scrutiny, whereas formerly it was not considered of so much importance. The shapes of the facets and the table, the proportions of the several parts were so cut as to be mathematically correct, and diamond cutting, as a correspondent elsewhere in this issue aptly says, is become an art where formerly it was an industry.

ARTHUR W. KIPLING.

The death of Arthur W. Kipling, on the 16th of January, was a peculiarly sad one. He was only thirty-one years of age, bright and popular among his friends and acquaintances. His death was due to a cold contracted only a few days before, and the suddenness of his death was a severe shock to his family. His lungs were affected

about ten years ago in an accident that occurred in Paris while experimenting in the art of cameo cutting. Mr. Kipling succeeded the firm of E. E. & A. W. Kipling on January 1 of the present year, the business of which was originally established by Richard Kipling, father of the deceased, in 1840. In March, 1886, when the steamer *Oregon* was wrecked, Mr. Kipling was aboard and acted heroically preserving order on board. On that occasion he also suffered some in health. His funeral was held on the 19th of January, the interment being made in Greenwood Cemetery.



The following list of patents relating to the jewelry interests, granted by the U. S. Patent Office during the past month, is specially reported to THE JEWELERS' CIRCULAR by FRANKLIN H. HOUGH, Solicitor of American and Foreign Patents, 925 F Street, N. W., rear U. S. Patent Office, Washington, D. C. Copies of patents furnished for 25 cents each.

Issue of December 27, 1887.

375,487—Clock, Alarm. J. H. McGlynn and W. P. Howells, Wilkesbarre, Pa.

Issue of January 3, 1888.

375,771—Watchmakers' Lathes, Clamping Jaw for. E. Rivett, Boston.

375,770—Watchmakers' Lathes, Countershaft Bracket for. E. Rivett, Boston.

376,015—Watch, Stem Winding and Setting. T. F. Sheridan, Springfield, Ill.

Issue of January 10, 1888.

376,074—Clock Striking Mechanism. William E. Counter, Three Rivers, Mich.

376,282—Cuff Button. Frederick F. Bioren, Newark, N. J.

376,377—Machine for Making Ladles. Isaac Hamilton, Denning, N. Y.

Issue of January 17, 1888.

376,434—Adjusting Attachment for Opera and other Glasses. Ivan Fox, Philadelphia, Pa.

376,508—Die for Making Diamond Settings. Christian Blancard, New York, N. Y.

376,524—Watch Case Spring. Carl G. Harström, Peekskill, N. Y.

376,602—Mechanism for Timing Horses. Harry A. Leonard and Gover Kettlewell, Baltimore, Md., Assignors of one-third to Richd. S. Culbreth, same place.

Issue of January 24, 1888.

376,847—Eyeglass Holder. Calvin S. Ball, Syracuse, N. Y.

376,854—Emery Wheel. Wm. Calvert, Sterling, Ill.

376,890—Button. Daniel A. Ladd, Newark, N. J., assignor to the Newark Collar Button Co.

377,003—Tool Handle. Christie L. Young, Springfield, Mass., assignor to Charles S. Saxton, same place.

If medals are any indication of valor and merit, the Bulgarians lead the world. No fewer than 64,000 silver medals were despatched to Sofia from Vienna a few months ago, and within the last fortnight an additional order for 30,000 has been received, which the Austrian mint is now engaged in manufacturing. A foundry near Buda-Pesth has also delivered 30,000 bronze medals at Sofia. For a small army this is doing very well.



Syracuse is quite well supplied with retail jewelers. Joseph Seymour Sons & Co. have the largest and handsomest store, and are undoubtedly doing the best business. They report the best holiday trade since 1883. Messrs. Joseph and Edwin Seymour have full charge of the retail store, and Messrs. Edwin G. and Charles H. Seymour manage the wholesale or manufacturing establishment connected with this firm, and devoted wholly to the manufacturing of solid silver spoons, forks, and fancy pieces in solid ware. Mr. Charles H. Seymour takes an occasional trip West for this branch of the business, but Mr. J. W. Pierce is their regular western traveler, and they report the largest trade West this year in engraved goods that they have ever had, especially in combination sets in cases. In their retail store they do not carry the large stock of jewelry that their predecessor did, but they have a clean, well selected stock and sufficient for the times, and without question are paying a good dividend on their stock.

Mr. Howard B. Rathbone, who has been for several years past with Mr. E. B. McClelland, has accepted a position as salesman for Joseph Seymour Sons & Co., and enters upon his duties about February 1, 1888. Mr. Rathbone is recognized as one of the most prominent society men in the city.

The next house in the jewelry business here is that of J. Dean Hawley & Co., composed of J. Dean Hawley, Mr. Frank Wells (who has purchased an interest), and Mr. Hawley's son, W. Dean Hawley. They have a fine store and quite a large stock, and as both Mr. Wells and young Mr. Hawley stand well in society here, they will get their share of the business.

Next in order is the old established house of Becker & Lathrup, composed of two of the best men in the trade. They have an established trade that has long since made them independent. They have a good stock, but unfortunately for them a large fire next door damaged their store so the north wall had to be taken down and rebuilt, and it will be some time before their store regains its usual attractive appearance.

One of the rising jewelers of the city is Mr. George E. Wilkens, who for a number of years was watchmaker for D. Valentine, and is acknowledged to-day to be the best watchmaker in the State outside of the city. He opened a small store several years ago here for the sale of diamonds, fine watches and chains, and has built up a very satisfactory business. He has the control in this country of the celebrated Baume watch, manufactured at Geneva, where they have their main office and factory, with a branch office at London, England. They manufacture one of the finest as well as the most complicated watches that is produced in chronographs and the different repeaters. These watches, after leaving their factory, are sent to an adjuster named F. Borgstedt, of Locle, who springs, adjusts and rates these watches before they are put upon the market. This adjuster does work for the best watch manufacturing concerns of Europe. As another guarantee of the ability of these watches to run correctly Mr. Wilkens will furnish, at a trifling extra expense, a certificate with each watch from the Kew Observatory, of London, England, showing the running rate, or how close each movement will run.

E. B. McClelland, the artistic jeweler of Syracuse, has rented a two-story brick dwelling on Warren street, and, after remodeling it, has quite an attractive art store, devoted more to the sale of antique furniture, bric-à-brac, pottery, cut glass and stationery than to the sale of jewelry. He has three good-sized rooms on the first floor and three smaller ones on the second.

C. Edgar Eager, formerly with C. S. Ball, Jr., has a handsome

store at the corner of Genesee and Salina streets, and is doing a very nice business.

C. S. Ball, Jr., also has a pretty store and fair stock.

The failure of Payne, Steck & Co. was quite a surprise to many of the dealers here, and all express sympathy for Mr. Steck, as he has some fast friends here.

HARD SOLDER.



MINNEAPOLIS, MINN., January 20, 1888.

Cold weather and heavy snows have checked the natural flow of business during the past week or two and since the holiday trade was at an end. This has not, of course, cut off sales to any appreciable extent, because there is never much trade in the northwest at this season of the year, though it has somewhat checked the flow of collections. The jobbers in jewelry almost without exception declare that their holiday trade was better than it had been in any preceding year.

Mr. A. J. Warner, of the Warner Jewelry Company, assures me that their trade has been fully 25 per cent. better than it was last year, and he says collections now are as good as could be expected.

Mr. H. L. Carpenter, of the Minneapolis Jewelry Manufacturing Co., says that they also have enjoyed a very good trade, although it was interrupted a little before the holidays by a change in their traveling force. They are now taking their annual inventory after two years of exceedingly successful business. The Warner Jewelry Co. and the Minneapolis Jewelry Manufacturing Co. are the outgrowth of the A. J. Warner Jewelry Co., the Messrs. Carpenter withdrawing from the old company and establishing the Minneapolis company. They have built up a large and growing trade. Mr. Carpenter says that collections are good, although the interruption in travel and of the receipt of mails has somewhat curtailed receipts from this source. He anticipates comparatively little trade until spring, but is well satisfied with the year's business.

Reed & Dailey, who resumed business under their own control about a month before the holidays, say that their trade was as good as could be expected under the circumstances. The house was exceedingly popular, and their old customers were only too glad to return to them after the change in members of the firm, and the financial difficulties which put their business for a time into the hands of an assignee had been adjusted. They are busy now preparing for their spring trade.

By the death of Judge Beebe, the wife of Mr. A. Sanborn, a Minneapolis manufacturing jeweler, comes into possession of a fortune of probably \$75,000. The Judge left an estate of something over \$200,000 to his three children, of whom Mrs. Sanborn is one.

There have been two local failures in the jewelry trade recently. One of these was Mr. E. P. Thompson, who did business on Nicollet avenue, near Fifth street, in Minneapolis. He had once before been in financial troubles, and had been helped out by his father, who is financially able. His credit was impaired at that time, and an assignment was made as a sequence to the complications at that time out of which his father then helped him. The assets and liabilities are not heavy, and a receiver is closing up the business.

Berthiaume Bros., who removed here about six months ago from Crookston, in this State, made an assignment soon after the 1st of January to W. W. Waite. They are dealers in a small way, and the assets are about \$5,000, with liabilities considerably in excess of that sum. The brothers own, also, some real estate both

here and in the vicinity of Crookston. In fact, some of their complications were the result of real estate speculations which did not pan out as expected. The business here is to be closed out, and the brothers declare their intention to return to Crookston, probably to re-engage in business there.

The lumber camps in Minnesota and Wisconsin are, as usual, being canvassed by the traveling dealers in jewelry. One St. Paul concern has at least two men in the woods, and they are reported to be making generous sales. This is one of the unique features of the jewelry business peculiar to a lumber section. Salesmen go from camp to camp with their stock of jewelry, chiefly watches and watch chains and things calculated to catch the eye of the male customers, although the fact that some of the lumbermen are not entirely blind to the charms of feminine friends elsewhere, leads the salesman to carry goods suitable for presentation to ladies. Of course, when the men go into the woods they take no money with them and are paid off when they come out in the spring; but the traveling jewelry concerns are willing to accept time checks which are paid by the firms in whose employ the men may be. A large amount of business is done in this way every winter. The goods are sold at good margins of profit. While some of the concerns deal reasonably fair with the lumbermen, such is not always the case, and some of the leading logging firms have issued orders not to permit these traveling salesmen to open their packs in their camps. Nothing of the kind has yet been done in Minnesota, but in Michigan, I understand, the rule is becoming quite general.

The rivalry over window displays between the local retail jewelers mentioned in my last letter was extended well up into the holidays. It became so sharp that each firm indulged in, besides the display, long descriptive paid articles embellished with the rough quick process illustrations peculiar to the daily newspapers. Columns of stuff of this kind were printed, and the public, what with the efforts of the three or four firms who participated in it to attract attention to their particular windows, were kept well interested in what the jewelers had to offer. Of course their patronage did not suffer by this unique though somewhat expensive system of advertising.

NEMO.

Trade Prospects in Colorado.

DENVER, COL., January 11, 1888.

The rush is once more over, and has been fully up to expectations. Never before have the jewelers made finer or more elaborate displays. The old store of the late Tryner Jewelry Co. has been run through the holidays by Mr. H. L. Chapin, and he now is winding up his limited lease with an auction sale, previous to returning to his old quarters on Lawrence street. The neatest, finest and smallest window in town is that of Mr. Henry Bohm. His stock is certainly the choicest. His diamond trade has exceeded all expectations.

Mr. H. S. Porteous and Mr. Smith, his manager, of the "Diamond Palace," in the Opera House block, have lately put in extensive improvements in the way of machinery, etc., and are equipped to produce a duplicate of anything made in fine jewelry; also in hollow silver ware. It is a very complete establishment.

Mr. P. Gottesleben, as usual, had a splendid trade, and his vast sales-room never appeared livelier.

The Lorimer street stores noticed a slight falling off, probably due to the advance of trade up-town. Amongst the jobbers Blythe & Leman and Mr. C. W. Little had a bountiful trade.

The prospects for 1888 are exceedingly bright. Denver has at last caught a regular real estate boom, prices having advanced the past year 75 to 100 per cent. Not a few of the local jewelers are putting their surplus profits into real estate with every indication of a large return. The climate of Denver is probably the finest all the year round to be found in the United States. The population has increased from 35,000 in 1880 to 90,000 in 1888, and still the rush continues. A large percentage of the new arrivals are seekers after

health, and unless too far advanced with lung difficulties, are almost sure to completely recover in the high altitude found here. If there are any of our Eastern readers who find the damp chilling air of lake or coast cities is encroaching on their health, Colorado extends a cordial welcome, with almost a sure relief. ROUGH DIAMOND.

The Jewelers' League Meeting.



THE ELEVENTH annual meeting of the Jewelers' League of the city of New York, was held on Tuesday evening, the 17th of January. The attendance was very satisfactory as regards numbers, there being about a hundred and fifty members present. The President, Mr. Henry Hayes, presided, and the meeting was called to order promptly at eight o'clock. Mr. Hayes spoke as follows:

PRESIDENT HAYES' ADDRESS.

Gentlemen and Fellow Members of the League:

We assemble at this, our eleventh annual meeting, with the history of another year behind us, warranting feelings of profound satisfaction at the substantial condition of our association. The loyalty of its members has never been more devoted than at this moment. The assessments have been met with remarkable punctuality, and, though these amounts were not so large as really to be normal, yet in the few instances where they have burdened the members, there has been unhesitating effort to successfully meet the obligations.

We have reason to be proud of an institution that has done such remarkable work in the past and that promises so well for the future. Our death rate of twenty-six members is very low, and with the large amount of benefits no one should or can expect to pay annually lower dues, but, in fact it should be readily seen by all who merely glance at the principle of life insurance, that the aggregate must be greater than has yet been reached.

We all expect to pay what it costs to insure our lives, but thus far we have not reached the cost. Examine for yourselves the tables of rates of all the solvent ordinary payment companies, and observe the prices named for a person of the "average age" of our membership, and you will find that the assessments of the League do not equal the premiums charged for a policy of one-half the amount paid to the beneficiaries of our deceased members.

We need not deceive ourselves as to the amount of obligation resting on each of us, but we can be assured that it is worth every required effort to maintain and increase the beneficence of an association which is productive of so much unstinted good.

Referring to the proposed amendments to the Constitution and By-Laws, I would urge the importance of the proposal to increase the Contingent Fund, as a measure calculated not to lay burdens on our shoulders, but rather to provide for decreasing these burdens at periods calling for relief, especially of such members as may in times of emergency need the aid thus provided for themselves as well as by themselves. We are the only reliable institution of the kind which has no similar wise provision, and why should we be foolish enough not to learn by other people's experience, even if we doubted our own?

The other proposed amendments are so equally simple and self-evident that argument here is superfluous; yet the one which will be most promptly adopted should not be passed by without calling attention to the fact of the voluntary reduction by the Treasurer of the percentage allowed him by our law. In spite of the refusal of the meeting last year to thus amend our laws, he has declined to take the percentage due him, and has accepted the smaller sum now proposed. Yet not one jot has he diminished from the care and labor unremittingly devoted to your interests. Intelligent ability cannot be adequately compensated by the meagre perquisites resulting from the minimum percentage, and we shall be, as we have been, indebted for the loyal attention so cheerfully yet affectionately bestowed upon the League, and of which the stipend is in no due measure a requital.

The Executive Committee have continued unflinchingly the duties laid upon them, and the amount of time, as well as the inconvenience, cannot be adequately appreciated by those of us who are unfamiliar with the work to be performed. Not only are they unpaid, but involuntary expenses are personally met, while there cannot possibly be any advantage gained by their positions. Surely they do not merit the carping criticism bestowed occasionally by a few members unaware or unappreciative of the singlemindedness of action prompted by unselfishness. There is no need to gild refined gold, and I will only say that if we can continue to retain the services of these gentlemen of the Executive Committee we shall be the gainers, not they.

The statistics for the past year will be fully presented in the report of the Secretary and Treasurer; hence I will not detain you by their rehearsal here. They show a most substantial condition of our affairs, well worthy the support of every member of this and kindred trades; more especially because it is a trade organization, enhanced by the support of a mutual brotherhood, controlled by men of our own selection; men responsible to us; men without reproach.

Our League, already strong, can be greatly strengthened were each member to obtain annually but one new member. Will you not, each and every one, make the slight effort necessary to thus extend its benefits, thereby increasing our own security? Then will each returning meeting be a milestone to mark a period of extended and expansive prosperity!

After the address by the President, the report of the Finance Committee was read and accepted, and then came the Treasurer's report, which is presented below in full. It shows a very satisfactory condition of the finances of the League, and the officers and managers

are to be commended for their efficiency, and the members of the League congratulated on the soundness and stability of their organization.

REPORT OF SECRETARY AND TREASURER.

Amount paid to beneficiaries to 1887.....	\$378,670.10
“ “ “ during 1887.....	125,000.00
“ “ Widow of C. F. Glover.....	2,292.60
Total paid beneficiaries	<u>\$505,962.70</u>
Funds on hand—General Treasury.....	\$7,500.00
Permanent fund (Board of Trustees).....	8,909.31
Contingent fund, “ “.....	52,259.40
	<u>\$68,668.71</u>
Membership, January 18, 1887.....	2,940
Members admitted during 1887.....	94
	<u>3,034</u>
Members dead, dropped and resigned.....	<u>216</u>
Membership at date.....	2,818
Current expenses, 1886—exclusive of Secretary's commission...	\$2,485.60
“ “ “ 1887 “ “ “ “.....	<u>1,944.44</u>
Decrease, 1887.....	<u>\$541.16</u>
Current expenses, 1886—including Secretary's commission.....	\$9,327.00
“ “ “ 1887 “ “ “ “.....	<u>7,151.19</u>
Decrease, 1887.....	<u>\$2,175.81</u>

There is but one of all the Assessment Organizations whose annual expenses per capita is lower than the Jewelers' League.

The undersigned have examined the accounts and assets of the Jewelers' League, and find them correctly set forth in the Annual Report herewith submitted by the Secretary and Treasurer.

WM. H. BALL, } Examining
JNO. C. DAY, } Finance
S. BASS, } Committee.

GENERAL FUND.	BENEFIT FUND.
Amount on hand January 18, 1887.....	\$2,114.18
RECEIPTS.	
65 Members' Initiation Fees, at \$3.00.....	195.00
65 Members' First Assessments, at \$2.00.....	<u>\$130.00</u>
Surplus Assessments, 18 Members at 50 cents.....	9.00
Surplus Assessments, 11 Members at \$1.00.....	11.00
Amount from Reinstatements.....	2,461.50
Interest on Deposit at Union Trust Co.....	178.55
Interest on Contingent Fund.....	1,420.00
Interest on Permanent Fund.....	335.00
Interest on Permanent Fund, \$50, 4 per ct. C'p'n B'd..	2.00
Assessments Numbers 84 to 87.....	22,586.00
“ “ “ 88 to 92.....	27,626.00
“ “ “ 93 to 95.....	17,048.00
“ “ “ 96 to 98.....	16,968.00
“ “ “ 99 to 103.....	27,894.00
“ “ “ 104 to 105.....	11,136.00
“ “ “ 106 to 109.....	21,868.00
Surplus on above Assessments	832.50
Amount donated by Members for Mrs. Glover.....	<u>2,292.60</u>
Total amounts to the credit of the Treasury... ..	<u>\$9,851.33</u>
	<u>\$145,256.00</u>

DISBURSEMENTS.

Beneficiary of Joseph Abright, Auburn, Ind. \$5,000.00
“ John K. Gilbert, Phila., Pa. 5,000.00
“ W. S. Hedges, New York City... 5,000.00
“ W. S. Connolly, Manheim, Pa. . . 5,000.00
“ Monroe Hendry, Luling, Texas. . 5,000.00
“ Alfred B. Miller, Baltimore, Md. 5,000.00
“ Amasa B. Britton, Summit, N. J. 5,000.00
“ Ernest G. Haig, Baltimore, Md. . 5,000.00
“ John T. Tolmie, Saratoga, N. Y. 5,000.00
“ Gustave Willemin, B'klyn, N. Y. 5,000.00
“ Isaac Seligman, Chicago, Ills. . . 5,000.00
“ Fred. Mongin, Oswego, N. Y. . . . 5,000.00
“ Geo. Hartje, New York City. . . . 5,000.00
“ Louis F. Tissot, Brooklyn, N. Y. 5,000.00
“ S. S. Wheeler, Hallowell, Me. . . . 5,000.00
“ E. E. Robine, Brooklyn, N. Y. . . 5,000.00
“ Edward Hunziker, N. Y. City. . . . 5,000.00
“ August Trier, New York City. . . . 5,000.00
“ Max Forchheimer, Cleveland, O. . 5,000.00
“ J. Jessurun, New York City. . . . 5,000.00
“ Chas. H. Moulton, East Cam- bridge, Mass. 5,000.00
“ L. H. Schmidt, Louisville, Ky. . . 5,000.00
“ W. H. Wiggins, Phila., Pa. 5,000.00

Beneficiary of Adolph Jerger, Hawkinsville, Ga. 5,000.00
“ L. W. Miller, Rutherford, N. J. 5,000.00
Secretary and Treasurer, 5 per ct., \$7,262.80
Less rebate 1½ per cent., 2,178.85
5,083.95
40,083.95

Amount in Benefit Fund,

\$15,172.05

MISCELLANEOUS DISBURSEMENTS.

Books, Stationery and Printing.....	\$753.26		
Postage and Rent of P. O. Box, 3444.....	589.24		
Rent of Office.....	400.00		
Gas and Ice.....	33.09		
Office Expenses.....	69.85		
Services of Counsel....	75.00		
Rent of Box in Nassau Safe Deposit Vaults..	10.00		
Fees of Examining Surgeon.....	14.00		
Secretary and Treasurer, 5 per cent..	\$175.45		
Less rebate, 1½ per cent..	52.65	122.80	
Paid to Chas. H. Thurber for Mrs. Glover..	2,292.60	4,359.84	5,491.49
			\$20,663.54
Transferred to Board of Trustees (Permanent Fund)	337.00		
“ “ “ “ (Contingent Fund)	12,826.54		13,163.54
			\$7,500.00

BOARD OF TRUSTEES.—(Permanent and Contingent Funds.)

	Permanent Fund.	Contingent Fund.
Balance reported January 18, 1887.....	\$8,393.76	\$39,611.41
Accumulated during year 1887, (Interest on Bonds)...	337.00	1,420.00
Interest on Deposits.....	178.55	
Accumulated during the year 1887 (Surplus from Death Assessments)....		11,227.99
		<u>8,909.31</u>
Balance in hands of Trustees.....		<u>\$61,168.71</u>

WM. L. SEXTON,

Secretary and Treasurer.

After the report from the Executive Committee, to the members of which are due the hearty thanks of every member of the League for the efficient discharge of their duties, the President announced that the election of officers was next in order.

There were but two nominations for President, Henry Hayes and Joseph B. Bowden, but upon Mr. Bowden's withdrawing his name, the unanimous and hearty election of Mr. Hayes resulted amid loud and prolonged applause. Mr. Hayes responded in a few pleasant words.

The election of Vice-Presidents then proceeded with the following result: Mr. J. B. Bowden, First Vice-President; Mr. Charles G. Lewis, Second; Mr. James P. Snow, Third; Mr. Robert S. Johnson, Fourth.

Mr. William L. Sexton was re-elected Secretary and Treasurer, and acknowledged the confidence thus shown in him in a few brief remarks.

The Executive Committee remains the same, the three members whose terms expired having been again chosen.

The proposition of Secretary Sexton to reduce the compensation of the Secretary from five to three and one-half per cent. was adopted.

The constitutional amendment submitted by Mr. Yerrington, extending the age limit to forty-five years, was carried by a vote of 110 to 36.

The other amendment, proposed by Mr. Geo. C. White, Jr., increasing the Contingent Fund by making the annual dues \$4, led to considerable discussion, at the close of which the President put the question, and the amendment was carried by a large majority.

The President then appointed as the Examining Finance Committee for the ensuing year, C. C. Champenois, Jacob Strauss and L. T. Best, and the meeting adjourned shortly after ten o'clock.

The Jewelers' and Tradesmen's Company.

THE SECOND annual meeting of the Jewelers' and Tradesmen's Company was held at their office, 32 and 34 John street, on January 16. Their was a fair attendance of members, and the reports of the President Mr. Gilbert T. Woglom, of the Secretary, Mr. E. S.

Johnson, Jr., of the Treasurer, Mr. Saml. W. Saxton, and the Medical Director, Mr. C. F. Roberts, were read and heard with interest. The present condition of the company was shown to be entirely satisfactory, and far beyond what its originators expected. During the year the amount of certificates of insurance written by the company was \$1,079,500. There was not a single loss by death or lapses, the latter fact showing the complete faith which the members have in the plan and management of the organization.

The Treasurer reported a balance in his hands of \$1,934.47, and stated that the United States Trust Company had been selected as the depository for the funds of the company.

Since the above meeting, we learn from Secretary Johnson that new applications are being continually received, and during the first week after the meeting as much as \$40,000 certificates were issued to new members.

The company have a large list of medical examiners throughout the country, and each new applicant is examined thoroughly before he is admitted.

Any person in the trade wishing to learn more of this company, should address the Secretary, Mr. E. S. Johnson, Jr., P. O. Box 3140, New York City.



The jobbing jewelers of Chicago shook hands with each other and wished each other a Happy New Year with a heartiness and vim that bespoke prosperity and hope commingled. It was fitting that they should do so, for never since the tidal wave in the 70's has any such year of continued prosperity come to the trade. The jobber who talks about having made an advance over the previous year of less than 25 per cent. is laughed at, and, truth to speak, such a one is rare. Money has been easy, collections have been good, and the sympathetic prosperity in other staple lines has tended in no small degree to work up the jewelry "boom" of 1887. It is not too much to call it a "boom." Jobbers have been looking for and prophesying a "boom," that was always going to come with the fall trade for an almost indefinite number of years. The "boom" has come, even if some are hardly prepared to admit it, but "boom" or no "boom" the trade has had an exceptionally good year, and every member of it knows it. All indications go to show that 1888 means to keep up the reputation so well earned by its predecessor, and judging by the experiences already met with by travelers on the road and in the order departments of the jobbing houses, the expectation seems almost sure of realization.

Mr. Edward Forman, receiver of N. Matson & Co., in his report filed in the United States court on January 20, announced that his total receipts had been \$127,171; and that he had paid on judgments \$97,097. New York creditors representing over \$58,000 have asked that Mr. Forman be continued as receiver. The court ordered that Mr. Forman should continue as receiver, to carry on the business and sale until March 1, and instructed him to continue distribution until the unsecured claims are filed and verified.

On January 9 Enos Richardson & Co. filed a petition in the District United States court in the case of the Gorham Manufacturing Co. against N. Matson & Co., in which they represent that they are contract creditors of the defendants to the amount of \$12,846, and asking leave to intervene to protect their rights, and receive their share of any dividends that may be declared out of the estate, as the judgments against N. Matson & Co., which aggregated \$113,000, are now nearly all paid, Enos Richardson & Co. take this action to

prevent any of the remaining creditors from taking precedence of them.

The firm of Glickauf & Newhouse, of this city, came into unfortunate and unenviable notoriety, through a scrape into which Mr. Newhouse and his wife fell in giving contradictory testimony in a case in the county court, in which an investigation was being made into the suspicious business transactions of Max Newhouse, a bankrupt clothier, in hiding his goods from his creditors. Judge Prendergast declared that Leopold Newhouse and his wife had committed perjury in concealing the true inwardness of the placing in the safe of Glickauf & Newhouse several packages of money, alleged to belong to the bankrupt estate of Max Newhouse. Leopold Newhouse was sentenced to 10 days in the county jail, but sentence was suspended until the recovery of his wife, who is suffering from severe nervous shock. Mr. Glickauf's testimony seemed to be straightforward. When Mr. Leopold Newhouse appeared for sentence, his attorney took an appeal to the Supreme Court from the judgment of the court on the ground that Judge Prendergast had no right to issue a citation for another than the actual debtor. Judge Prendergast allowed the appeal in \$1,000 bonds.

Mr. O. G. Fessenden resigned his position as Secretary and Western Manager of the Jewelers' Mercantile Agency early in the month, and left for New York, where he will make his new home, on January 10. Mr. Fessenden carries with him the best wishes of a large circle of acquaintances.

Mr. E. Kistner, formerly with Mr. Louis Mannheimer, has gone to Cincinnati to exchange the jewelry business for the theatrical profession.

Mr. D. D. Chandler, formerly with Chandler & Shader, proposes to do a jobbing business on a limited scale at 57 Washington street, and was in New York the first week of January buying a line of goods.

The trade is pleased to learn that Mr. D. C. Landers is to represent Fred. I. Marcy & Co., of Providence, in Chicago and the West this year.

Many regrets are heard around among the trade that Mr. H. H. Butts, the Chicago manager for Joseph Fahys & Co., is severing his connection with Chicago and making his headquarters in New York. Mr. Butts' genial, affable disposition won him hosts of friends here, and Chicago regrets to give him back again to the East.

Mr. W. A. Burrows will continue to represent the firm of Bryant & Burrows, which recently dissolved.

The Springfield (Ill.) Watch Co. is now employing some 900 hands, and the output of the factory is now 400 movements daily.

A promising partnership recently entered into is that between Mr. Charles Hoefer, formerly with M. A. Mead & Co., of this city, Mr. Frank Barger, late with Wheeler, Parson & Hayes, and Mr. G. W. Marquardt, Des Moines, Ia. The trio of rising and enterprising young business men will conduct a first-class jobbing business in Kansas City.

Mr. C. C. Rhoden, of Sioux City, Ia., proposes to try his fortune in Chicago.

The E. N. Welch Manufacturing Co. is succeeded here by the well-known F. E. Morse & Co.

Mr. D. L. Safford, of the Jewelers' Mercantile Agency, arrived in Chicago early in the month, to look after the interests of the Agency, of which he is President, until he secures a suitable successor to his late manager, Mr. O. G. Fessenden.

Mr. E. J. Scofield, New York agent of the Elgin National Watch Co., was in Chicago just in time to be present at the banquet of the Jewelers' Association. It is needless to say that he appreciated the spread.

Mr. K. H. Clark, a prominent jeweler of St. Joseph, Mo., was in town for several days in the middle of the month, visiting his old

friend and employer, Mr. A. L. Sercomb, of the Meriden Britannia Co.

Mr. E. Holbrook, general manager of the Gorham Manufacturing Co. in New York, spent most of the second week of January in Chicago.

Mr. Moritz Stein, brother of Mr. Stein, of Stein & Ellbogen, will shortly be married to Miss Lena Krohn, daughter of Mr. Jacob Krohn, President of the Second National Bank of Freeport, Ill.

Among the well known jewelers seen in the city during the month were: G. A. Sites, Fowler, Ind.; J. E. Haep, Montpelier, O.; J. W. Howenstein, Kendallville, Ind.; C. J. Olin, Piqua, O.; H. C. Ebersole, Logansport, Ind.; T. W. Martin, Denver, Colo.; J. L. Ackerman, Lowell, Ind.; Sam. E. Hall, Hampton, Ia.; N. V. Cole, Michigan City, Ind.; Warren Cole, Crown Point, Ind.; Mr. Blythe, of Blythe & Lehman, Denver, Colo.; C. B. Woodward, Morris, Minn.

W. A. B.



We do not like to boast too much—it is contrary to the principles of a fair and generous spirit—yet we must say that the jewelers' trade in this part of the country has been remarkable for the last few months. Your correspondent has taken the pains to send a card to the leading jewelers of the south-eastern states asking about the trade, and the answers are of the most flattering nature. Some of the largest houses in our southern cities state that they have done this season from forty to fifty per cent. more business than in previous years. Others have not done so well as that, yet all of the reports, without a single exception, place the estimate above twenty-five per cent. This is a considerable showing and deserves the consideration of all thoughtful people, especially when they contemplate moving and making an investment.

The Piedmont Exposition, that drew together so many people in this place last Fall, will be opened again next Fall. That fact was settled yesterday by the board of directors. Mere mention of this will be sufficient notice to a large list of the most prominent jewelry establishments in the South. They will take advantage of it as they did last November and show the progress the South, and especially the Piedmont South, is making in the manufacturing line. Trade in Atlanta for the past month has been above the average, notwithstanding the fact the rainy weather has been against us. The Atlanta people, however, are a peculiar class. If they once determine on anything it has got to be accomplished. Atlanta, in a certain sense, is a Northern city in Southern territory. It is very seldom you ever hear any one say that trade is dull. If it begins to get dull, more energy is used, and consequently we have the state of affairs we herewith report. If there is one man in Atlanta who deserves more credit than any other, it is Mr. Delkin. He has succeeded in establishing the largest wholesale jewelry house in this city. He is a young man and has associated with him the very best talent, and the work turned out from his manufacturing department is equal to the best. He is known by the superior work he makes. Some of the nicest work executed in Atlanta for a long time was by Mr. F. C. Wade, in the manufacture of the medals for the National Poultry Association that has been in convention here for the last week. Mr. Wade is an artist in his branch of his work.

Freeman & Crankshaw have moved into their new house on Whitehall street. The interior decorations of their elegant building are the finest in the South. Since their change they have greatly

increased their stock and are now classed with the largest jewelry houses in the South.

Mr. George T. Beeland, of Macon, is a young man of much promise. His store is one of the nicest in that city and his trade is in keeping with the spirit of the times.

Mr. William Schneight, of Augusta, says that his trade has been this year over twenty-five per cent. better than last year. He is a good man and handles the best and finest goods. He was recently elected director of the National Exposition to be held in Augusta next Fall. This was a compliment justly deserved.

Mr. J. L. Turner (formerly of Turner & Baker), Cartersville, Ga., has moved to Gainesville, Ga. Mr. W. F. Baker continues the business at the old stand, with Mr. W. L. Bolt, formerly of Acworth, as assistant.

Mr. J. W. Bozeman, the Marietta jeweler, who lately burned out, seems to be in a peck of trouble about his insurance. He claims to have paid the agent for \$3,500 insurance, but the agent denies this. He holds only a policy for \$1,200, and the company are not willing to pay even this amount. The stock saved amounts to \$1,750, which is damaged about ten per cent.

J. H. Bate & Co., of Acworth, Ga., have opened a branch store in Marietta, which they have fitted up in first-class style. They are live men and will, no doubt, do a successful business here.

Mr. V. A. Kilgroe has moved from Dallas to Salt Springs, Ga.

Mr. W. M. Higgins has moved from Jackson, Ga., to Tuskegee, Ala., where he has bought the business of the late W. C. Dauner.

Mr. J. R. Edwards has moved from McDonough to Conyers, Ga.

The small jewelers on Decatur street, in this city, must move, as the landlord has rented several of the smaller stores for barroom purposes. This is a sad fact, yet it is true.

T. J. K.



"Tom" H. B. Davis of the Middletown Plate Company was one of the latest visitors.

"Joe" Watson, of Reid & Barton, dropped in recently to see his many friends.

Mr. Isaac Loeb of Providence passed through about the first with samples and diamonds, which he said were worth \$37,000.

The annual meeting of the Cincinnati Wholesale Jewelers' Association was held in this city at the Burnet House, Thursday evening, January 4, 1888. President Wm. Oscamp occupied the chair. The minutes of the last meeting were read and approved. A vote of thanks was tendered the retiring secretary for the untiring interest he had taken in the duties of his office and for the very satisfactory way in which he had discharged such duties. The next business was the election of officers for the ensuing year. Two candidates were nominated for each office. The result of the election was as follows: President, Mr. Herman, of D. Schroeder & Co.; Vice-President, Mr. Chas. A. Nolting; Secretary, Jos. Becker, of Jos. Fahys & Co.; Treasurer, Mr. Lindenberg. The meeting then adjourned to the banquet hall of the Burnet House, where an elegant repast had been spread under the directions of the committee, Col. Moore and Mr. Schroeder. Mr. Wm. Oscamp, who, as chairman of the organization, held the place of honor at the head of the table, made a short but very appropriate address of welcome. Then followed an hour of great enjoyment. When coffee and cigars were brought in the chairman was loudly called upon for a speech.

After a few appropriate and witty remarks he introduced the new president Mr. Herman, who spoke briefly thanking the association

for the honor conferred upon him. All of the newly elected officers responded to calls for speeches and the remarks that followed were pronounced the best part of the feast.

Mr. E. V. Clergue, of the E. Howard Watch Co., was then introduced. He said: "Gentlemen, I am very much pleased to be among you to-night, and glad to see the good feeling displayed on all sides. Your chairman does me a great compliment; permit me to express my thanks, and to wish you all a prosperous New Year."

The next call was made upon General Mindel of Philadelphia; and after him Mr. L. A. Homan, the retiring secretary, made a few remarks. "Gentlemen, I cannot say much about the watch-case movement business, because I know nothing about it. My business, as you all know, is the manufacture of silver-plated ware, but I will give you a pointer on that, within the next thirty days you may expect an advance in prices for the reason that raw materials have advanced sixty per cent. within a very short period. I thank you for the honor that you have done me."

During the evening a fine floral piece in the design of a watch worked in roses and immortelles was brought in with the compliments of the *Watch Dial*. When the meeting broke up the bouquet was unanimously voted to Mr. Clemens Hellebusch, the first president of the organization. It was exhibited for a week or more in his show window on 4th street.

The holiday trade in Cincinnati was the best that retailers and jobbers have known for years and dealers in all lines are feeling quite jovial, although they do complain some about the fancy goods trade which the dry goods houses and other cheap John concerns seem to be destined to monopolize. One well known dealer remarked yesterday that it was impossible for him to handle with profit anything but solid goods, watches and diamonds. The dry goods stores seem to be able to buy the fancy goods at their own prices and it is impossible for the retail jewelers to compete with them.

The latest news to the trade here is the new departure of Mr. Steinan, who, on March 15th, expects to open a new place in the new Aetna Insurance Building, which he claims will be the finest jewelry store in the West. He gave the contract last week for the wood-work, which will be in "white mahogany," something never seen here before. At the new place, Mr. Steinan says he will stick strictly to diamonds, watches and solid goods. His brother will run the place at 6th and Race as a fancy goods house; and the old store in the Arcade, known as the American Jewelry Company, will be closed, the business being transferred to the new place.

"Zeke" Schott, whom every one knows, has opened a new retail place on 5th street.

G. H. Rabe, a little retail dealer in the Arcade, has put up the shutters.

Mr. R. H. Galbreath, with Mr. Duhme, is said to be the best judge of diamonds in the city.

The sensation of the holidays here was the robbery of Hellebusch's jewelry store. About ten o'clock one morning two fashionably dressed women entered the large establishment on West Fourth street. They were attired elegantly, each wearing a long sealskin sacque and having ornaments of the most costly kind. They looked at various articles of value and appeared undecided as to what they would purchase. At last, after much time spent in looking about the establishment, they took a pair of celluloid sleeve buttons and left, stating they would look further.

It was but an hour or so afterward that it was discovered that a tray containing some costly chains of the Queen Anne pattern and a lot of other articles of much greater value were missing. The salesman who had waited upon the women was Mr. John Callahan, one of the shrewdest in the employ of Hellebusch. He had not been altogether satisfied with their actions, and at once placed them down as the persons who had stolen the goods. Mr. Thomas Anderson, a

traveling salesman for the concern, was standing by during their presence in the store, and also had his attention attracted to them. Chief of Detectives, Larry Hazen, was notified and at once started out his force to effect the capture of the women before they could manage to get out of the city. Mr. Callahan and Mr. Anderson also visited the various jewelry establishments and hotels for the purpose of identifying the women. About half-past five o'clock that evening the two gentlemen entered the ladies' waiting-room at the Grand Central Depot. There they found the two females, who had purchased tickets for Columbus, O. While Mr. Anderson kept watch, Mr. Callahan went in search of an officer. Policeman Slottman placed them under arrest, taking them to 3d street police station. Later they were placed under charge of Detectives Morris and Hudson, and brought before Chief of Police Dietsch. They gave their names as Maria Smith and Lizzie McGuire. None of the detectives knew the women, although they were said to belong to a gang of half a dozen or so famous shoplifters. They wore almost \$4,000 worth of diamonds and jewelry, and appeared in no manner to be affected by the arrest. The next day after their arrest Colonel Hazen sent Detective Toker to the different express offices to learn whether any person answering the description of either had sent away a package. At the American the receiving clerk told him that a woman answering the description of the McGuire woman had sent a package to New York, giving the address and signing the receipt "Emma." Col. Hazen telegraphed Inspector Byrnes, who, a few days later, intercepted the package at New York, and it was returned, proving to contain the jewelry stolen from Hellebusch's. In the package also were some gold chains which were claimed by Louvett, the Fifth street jeweler, who also identified the woman as having been in his place. When the express clerk was brought forward, however, he failed to identify the McGuire woman as the person who had sent the package, although he had previously described her, even as far as the pin she wore at her throat, a slight fuzz upon her upper lip, and a noticeably remarkable diamond bracelet on her wrist. The women were bound over to the upper court, where they afterward gave bonds and then left the city. A few days after their arrest a man named Henry Snyder came to the city and located at a quiet hotel. He secured an attorney for the women, and ten days later an alderman from Boston came on. Then bonds were secured, as high as \$500 being offered for a bondsman, along with the requisite \$1,000 each, the amount of the bond.

They were never positively identified, although Eastern detectives, who were sent their pictures, claimed that the McGuire woman was Ann Durrigan, and the Smith woman Mary Bourck, both of Brooklyn. In this they undoubtedly made a mistake, however, as the women are known to belong to Boston, where they were in trouble not long since, shortly after their return from across the ocean. That they were the cleverest women ever visiting the West there can be no question. During the day on which the Hillebusch robbery occurred they visited every large jewelry store in the city. At Isbell's they looked at some articles, when the salesman who waited upon them had his suspicion aroused in some manner, and refused to show them anything more, and they left the place.

E. M.

AUTOMATIC WINDING OF WATCH.—According to a long, windy notice in a German paper, a very important invention has been made by one Schmidt, superintendent of a watch factory at Neustadt, Baden. It is a watch which winds itself through its own motion (on the perpetual motion principle, we presume). The mechanism, which, the paper says, is not yet entirely perfected, will, when it is finished, be patented at once, after which it is to be exhibited. The paper does not state whether it will be a key or stem-winding arrangement.



—The following named dealers were noticed in town during last month: J. T. Rogers, Atlanta, Ga.; Max Koehner, Baltimore, Md.; A. Bennett, C. E. Taylor, Binghamton, N. Y.; E. O. Quimby, Boston, Mass.; L. Emery, Bradford, Pa.; E. E. Covell, Brockton, Mass.; C. F. Heintz, E. A. Eisele, Buffalo, N. Y.; W. R. Bennett, Camden, N. J.; B. A. Bell, Chattanooga, Tenn.; H. F. Hahn, Chicago, Ill.; O. Young, H. Wolf, Chicago, Ill.; B. Plaut, A. Herman, L. Strauss, Cincinnati, O.; J. R. Burt, M. P. Hurlbut, I. M. Kallmeyer, Detroit, Mich.; George R. Hodsdon, Dover, N. H.; T. F. Ackerman, Easton, Pa.; M. G. Levy, Elmira, N. Y.; C. P. Forbes, Greenfield, Mass.; E. A. Gage, Haverhill, Mass.; W. G. Bailey, Helena, Montana; C. C. Hoefler, S. E. Woodstock, J. H. Barr, Kansas City, Mo.; E. Zahn, Lancaster, Pa.; D. Dusenbury, Middletown, N. Y.; M. Schwob, Montreal, Quebec; Fred. F. Neff, Nashua, N. H.; F. B. Catlin, Norfolk, Conn.; James W. Beath, Philadelphia, Pa.; A. McCandless, I. Ollendorf, H. M. Bonn, J. R. Reed, Pittsburgh, Pa.; J. S. Dinkelspiel, San Francisco, Cal.; D. McCarthy, Syracuse, N. Y.; J. F. Austin, G. Chillas, Thos. Marshall, Toronto, Ontario; S. Tappan, Troy, N. Y.; C. C. Mussina, Williamsport, Pa.; A. H. Bonnet, Zanesville, O.

—Odenheimer & Zimmern say that their business in the patented "O. & Z. Interchangeable" initial rings and lockets has reached proportions far beyond what they had expected. During the holidays their sales in these goods were very large, and they were compelled to run night and day to fill all orders promptly. They have a reputation in the matter of promptness which many firms might emulate, and for the coming year they have made liberal preparations to meet the growing demand for their popular goods. Their advertisement on another page shows some of the important features of their interchangeable initials.

DEATH OF FRANCIS T. BEMIS.

The death of Mr. Francis T. Bemis, of the well known retail jewelry firm of Bigelow, Kennard & Company, which occurred Jan. 24 ly at his residence 22 Newbury street, has thrown a gloom of sadness over all the trade in this city. Mr. Bemis was a native of Massachusetts, having been born 52 years ago in the little town of Lincoln. Armed with a little more than a common-school education and a naturally keen business faculty, he came to the metropolis at an early age and entered almost at once the employ of the above mentioned house. There he remained until his maturity, displaying an unswerving faithfulness to duty and close observation of details, and finally in 1863 he became associated with the firm in partnership. Conscientious, untiring and genial in all his business relations, he bore with him the elements of that success—moral as well as material—and popularity which comes of these and other characteristics of a public-spirited citizen. It was then he earned the deserved esteem of his associates, whether transient or permanent, equal or subordinate, and there is no better evidence of the general regard in which he was held than the prompt and touching tribute offered by the other leading houses in the trade. Prompted by their long and agreeable business relations with the deceased, and desiring to publicly signify their high appreciation of his character, the following firms closed their places of business at noon on the day of his funeral:

Shreve, Crump & Low, Palmer, Bachelder & Co., Robbins, Appleton & Co., A. Stowell & Co., Henry D. Morse & Chas. M. Foss, Geo. H. Richards, Jr., & Co., Howard Watch & Clock Co., J. V. Kettell & Co., Rand & Crane, C. A. W. Crosby, N. S. Wood & Son, Clarkson & Schrieber, B. A. Hersey, Henry Guild & Son, Lewis E. Jenks, Farrington & Hunnewell, Brooks & Pike, Harwood Bros., Floyd, Pratt & Rounds, D. C. Percival & Co., Morrill Bros. & Co., Whitney Bros., Henry T. Spear & Son, Ripley Howland Mfg. Co.

The cause of Mr. Bemis' death was pneumonia, which developed suddenly, after a few days' illness. He held a deserved prominence in the Art and Merchants' clubs and other home organizations, besides having a wide and peculiarly tender, private circle of attachments. There are two sons and a daughter left to mourn his loss.

—Mr. Eli W. Mitchell, formerly of Lampasas, has removed to Waco, Texas.

—Mr. Walter C. Herr, Lancaster, Pa., is the successor to Herr & Hartmann, recently dissolved.

—Mr. Le Boutillier, of Le Boutillier Bros., sailed for Europe on the 14th of January on the *Etruria*.

—A useful as well as beautiful little daily calendar has been received by us from Geo. O. Street & Sons.

—Chas. Boynton, formerly with Alling & Co., as Western traveler, has taken charge of the Eugene Jaccard jewelry store in St. Louis.

—Mr. J. B. Knowlson, of the Southington Cutlery Co., has returned to business at 20 Maiden Lane, after a pleasure trip to Canada with his wife.

—Frederick & Korthage, of Louisville, Ky., dissolved on January 16 by mutual consent. Mr. A. E. Frederick will continue the business as before.

—A Danish peasant, while ploughing near Tjoring, unearthed an armlet of pure gold weighing twelve ounces. It is believed to be a veritable antique.

—We have received handsome calendars from the Non-Magnetic Watch Co., Fred. I. Marcy & Co., Carter, Sloan & Co. and Mr. S. C. Jackson.

—J. W. Hull & Co., of Grafton, W. Va., were robbed of \$2,000 worth of goods last month. This was the fourth robbery that they have experienced within the past eight years.

—Mr. B. F. Phillips, of North Jackson, O., was robbed of several thousand dollars' worth of jewelry on January 20th, some cash and other valuables. The thieves have not been discovered.

—M. Walter Vail, of Deposit, N. Y., claims to be the only legitimate jeweler of the name of Vail in that place, and as such, says he is the only one entitled to receive catalogues, price-lists, etc.

—The Empress of Russia has been presented with a sewing machine of solid silver, studded with sapphires and enclosed in a case in the form of the Imperial crown. The fittings are of gold.

—The Canadian Association of Jobbers in American Watches held its annual meeting last month, and elected the following named gentlemen officers for the coming year: President, J. H. Jones, of Montreal; vice-president, J. Segsworth, of Toronto; treasurer, M. C. Ellis of Toronto.

—Jaxtheimer & Co., Warren, O., recently made an assignment to J. F. Wilson. Their liabilities are placed at \$12,000 and the assets at \$7,000. The firm started in business some time since by buying out Vantrot & Son, who now hold the largest claim against them. It is said that Vantrot & Son will repurchase the stock and resume their old business.

—E. Ira Richards & Co. were compelled to run their factory night and day during part of last season, to fill their orders. For the coming season they have already brought out many new patterns in their various lines. These are well up to the usual excellence of the novelties produced by this house, while the well known standard of quality, for which they are not surpassed, is the same as ever. The new goods are meeting with an encouraging reception.

—The Phoenix Glass Co. have enlarged several departments at their works in Water Cure, Pa., to meet the increased demand for goods of their manufacture. During last fall many orders were left unfulfilled owing to the large orders filled earlier in the season, and the incapacity of the works to turn out goods fast enough. For the season of 1888 they will bring out new lines of rare excellence in gas, kerosene and electric globes and shades and tableware, including some fine quality of rich cut glassware.

—The Custom House authorities recently made an important arrest, in the capture of Michael Yauck, who arrived in New York on Dec. 31st on the steamship *Rhine*. He successfully passed his baggage without his goods being discovered, and went to Eaton, Ohio, where he soon excited the suspicions of the authorities by offering watches and jewelry for sale. It has been discovered that he brought about \$10,000 worth of jewelry into the country without paying duty. He was taken to Cincinnati for a hearing, where he stated that he bribed a New York custom house inspector with a gold watch.

—Mr. Shaefer, of Hahn & Co., sailed for Europe late in December.

—Mr. Max Freund sailed for Europe on January 21 on the *Etruria*.

—Mr. F. Sonneberg, Omaha, Neb., lost his entire stock, worth \$5,000, by fire last month.

Mr. F. N. Lawrence, of South Gardiner, Me., was robbed of about \$1,000 of stock last month.

—Mr. Leopold Stern, of Stern Bros. & Co., sailed for Europe on December 28, on the *Aller*.

—Mr. Al. H. Bonnet, representing Mr. John M. Bonnet, Zanesville, O., was in town last month.

—Mr. J. J. Cohn has opened a shop at 50 Maiden Lane, where he will begin the manufacture of certain lines of goods.

—Mr. Thomas O. Haydock, of Philadelphia, was compelled to assign last month. His liabilities are \$9,641; assets, \$5,990.

—Mr. Leroy E. Nichols, of Boston, Mass., made an assignment on January 6. His liabilities are about \$7,000; assets, about \$2,000.

—The assignee of Mr. E. P. Thompson, Minneapolis, Minn., who failed recently, shows liabilities of about \$6,000, and assets of \$1,800.

—Mr. D. G. Gallet, Aberdeen, Dakota, has taken Mr. Davison into partnership with him, under the firm name of Gallet & Davison.

—Mr. Edward Rivelt, of Boston, has been granted a patent for a countershaft bracket for a watchmaker's lathe, also for a clamping jaw.

—Harris & Luchs, who failed recently, have finally effected a settlement with their creditors for 40 cents on the dollar, to be paid cash.

—Mr. George C. Ridgway, of Mansfield, O., failed on January 11. The liabilities are put at \$7,700, and the assets sufficient to cover them.

—Mr. Israel Fish, of Boston, Mass., has been succeeded by the Boston Watch and Jewelry Co., at the same place, No. 185 Hanover street.

—Mr. M. Goodman, Memphis, Tenn., failed for about \$20,000 last month. His assets are said to be about half the amount of his liabilities.

—A report is circulated to the effect that the Columbus Watch Company has begun to sell to jobbers only, instead of to retailers as heretofore.

—Mr. H. N. Lockwood has purchased the retail business of the Howard Watch and Clock Co. in Boston, and will carry on the business at 27 Bromfield street.

—Nickel is becoming so plenty, that the owners of mines are endeavoring to have the French and Chinese adopt it as a coin in order to find a market for it.

—Mr. Erhard Bissinger, the United States Consul at Beirut, Syria, well known to the jewelry trade in New York and elsewhere, sends us his greetings for the New Year.

—The firm of Woglom & Miller will be succeeded by Mr. Gilbert H. Woglom on the 1st of February. The business will be conducted as heretofore, and the line will remain the same—black onyx goods exclusively.

—In Long Island City, N. Y., last month, a young man entered the store of Mr. Francis Plain, and succeeded in stealing a tray of rings valued at \$500, which Mr. Plain had taken out of the show case to allow him to make a selection.

—The Middletown Plate Co. has secured the services of Mr. W. J. Buckley for their western representative at Chicago. Mr. Buckley was formerly at the Chicago office of the New Haven Clock Co., and before that he was with B. F. Norris, Allister & Co.

—No nation in the world ever piled up such an amount in its treasury as that now lying in the vaults at Washington. There is gold and silver to the amount of \$387,000,000, and money of other kinds, included in the Treasurer's statement, brings the total amount of cash on hand up to \$612,638,469.

—Grinberg & Glauber, of 32 Maiden Lane, were damaged to the extent of about \$1,500 by a slight fire in their shop on the 6th of January. B. Kahn & Son, who occupy the ground floor of the same building, had some of their optical stock damaged by water to the extent of several thousand dollars. The cause of the fire could not be learned.

—The police authorities of St. Paul, Minn., recently captured three burglars, one of whom confessed being implicated in the recent burglaries of jewelry stores in that city. He revealed the spot where he and his partners had secreted the stolen jewelry and a large amount was found there. Among it were the diamonds stolen from the show window of Mr. C. C. Bergh.

—The artesian well on the premises of the American Watch Tool Co. is completed. A good flow of water was found at a depth of 104 feet. The first 40 feet of drilling was through stone and hard-pan, then came 40 feet of clay, and the remainder was through slates and quartz. The water stands within 17 inches of the top of the 6-inch pipe used, and 9,000 gallons a day are pumped from it.

—The Sultan of Turkey has bought a Waterbury watch. Not that he needed it as a timepiece, for he carries an Elgin movement, but the Waterbury affords his 900 wives much innocent amusement. Each wife is permitted to wind one minute each day upon the Connecticut toy, and Hadab Pasha, Esq., writes to *Every Saturday* that the little plaything goes far towards preserving harmony in the harem.

—The National Watch Case Co. is the successor of the well-known firms of Booz & Co. and Mr. A. Humbert, of Philadelphia. The new concern will manufacture gold watch cases, and the long experience of its members in this line promises well for the excellence of the goods to be made. They have a large factory at 715, etc., Arch street, with capacity for 125 hands, which will be ready for occupancy on the 1st of February.

—The Cincinnati Wholesale Jewelers' Association held its annual meeting at the Burnet House on January 4. The election of officers resulted as follows: Mr. Aaron Herman, President; Mr. Chas. A. Nolting, Vice-President; Mr. Joseph Becker, Secretary; Mr. Charles J. Stern, Treasurer; and Mr. S. Amberg, Director. Refreshments and speechmaking were indulged in, and the occasion was made very pleasant by the sociability of the members. They are all satisfied that Cincinnati is just the nicest place on this earth for a jewelry center.

—The F. Kroeber Clock Company has erected a handsome street clock in front of its new store at 360 Broadway. It is mounted upon a massive iron column and has four dials. The hands and numerals are gilded, and the time can be clearly distinguished from a distance of many blocks from the store upon Broadway. The works of the clock are in the basement of the store, and the connection with the dials is made the same as in tower clocks. Consequently it will keep the correct time regardless of the weather, which can have no effect upon the works. The clock is a public improvement, and aside from its use as a landmark to mark the spot where the company has just made its headquarters, it will be useful to the thousands who pass it daily.

—The suit regarding electric protection to safes which has been pending in the U. S. Circuit Court for several years, between the Holmes Electric Protective Company and the Metropolitan Burglar Alarm Company, was decided on the 31st of December last by Justice Coxe. The court does not sustain the Holmes Company in its suit for infringement, and decrees a dismissal of the case with costs. This may be considered of much importance to the trade in New York, who were hesitating whether to use the new company for the protection of their safes. The Metropolitan Company is formed in the main part of jewelers. Mr. William R. Alling, of Alling & Co., is its President, and Mr. Henry Hayes, of Wheeler, Parsons & Hayes, its Secretary and Treasurer. Now that the suit has come to an end, the company will not be hampered in the least by injunctions. It proposes to be a strong competitor of the Holmes Company in the matter of prices.

—The city of Boston had a sensation for the jewelers last month. Walter F. Gregg, a prominent man of that city, well acquainted, bright, intelligent and seemingly honest, was discovered to be a most clever swindler. He started in the jewelry business on the installment plan, getting all his goods on forged orders from the A. H. Prentice Company. When Mr. Prentice, of this firm, recently discovered that about \$8,000 worth of diamonds had been put out without any account being made of them, he learned they had been given to Gregg. When Gregg was captured by the police he unhesitatingly confessed that he had been robbing the Prentice Co. for the past six months, and turned over to the inspectors a large number of pawn tickets. He also made an assignment of the stock in his own place to the attorney for the Prentice Co. He was afterwards placed on trial in the Municipal Court and waived examination, confessing his guilt. He was held for examination on a charge of larceny and also a complaint of forgery drawn in four counts. He was held in both cases, bonds of \$8,000 being fixed in each case.

—Mr. L. Kauffman's representatives, Dinkenspiel & Reeves, leave on their spring journey for the west and south during the present week.

—The store of W. H. Sprague, Newark, O., was damaged to a considerable extent in the big fire which occurred in that town on January 25th.

—"The New Jersey Watch Case Co.," is the name of a new case manufacturing company, with office at 16 John street, and factory at Union Hill, N. J.

—W. F. Foster & Co., of Ayer, Mass., have dissolved, Mr. Foster retiring and Mr. E. F. Hoskin going to Rutland, Vt. Mr. J. F. Peabody succeeds to the business at Ayer.

—Mr. C. S. Ball, of Syracuse, N. Y., promises shortly to place upon the market a new style of eye-glass hook, which he claims has several improvements over old styles. He recently had it patented.

—Mr. Amasa Lyon, the umbrella maker, recently made an individual assignment which did not, however, affect the standing of the stock company doing business under the title of Amasa Lyon & Co.

—Nathan and Isidor Straus, of L. Straus & Sons, and Mr. J. L. Webster, now are the members of the large dry goods firm of R. H. Macy & Co., in this city. Mr. J. B. Wheeler recently retired from that firm.

—Mr. W. F. King, of the firm of King & Eisele, says they are very busy in their factory. They have been advertising in the east for more hands, as they wish to double their capacity this year. Snaps will be "all the go."

—Mr. B. H. Knapp, of Smith & Knapp, Mr. F. H. Mulford, of Mulford & Bonnet, Mr. W. N. Walker, of Wheeler, Parsons & Hayes, and Mr. A. Tannenbaum, of L. Tannenbaum & Co., sailed for Europe on the *Umbria*, Jan. 21st.

—The failure of J. E. Jarck, of Pittston, Pa., on Jan. 4th, has created much interest among his competitors in that town. His liabilities were in the neighborhood of \$10,800, and the stock only brought \$3,000 at the sheriff's sale, though the prices realized were considered quite good.

—A large fire in Philadelphia on January 23d, in which about a million dollars' worth of merchandise was consumed, burning down several buildings in the vicinity of Eighth and Arch streets, damaged the jewelry store of I. Herzberg & Brother, located on that corner, to the extent of about \$3,000, fully covered by insurance.

—Albert Brandenburg, of Peoria, Ill., was recently a passenger from Europe on the steamship *Herman*, which arrived in the port of Baltimore on January 3d. He was found to have secreted about his person watches, rings, chains and other jewelry, and he was charged with intent to smuggle. He has been sent to jail to await the action of the grand jury.

—The directors of the Jewelers' Mercantile Agency (limited), at a recent meeting, passed a resolution expressing their appreciation of the "fidelity, ability and eminent courtesy" which have characterized Mr. Oliver G. Fessenden as secretary of the company and as the manager of its Chicago branch. The cause of this action was the tendering of his resignation by Mr. Fessenden.

—Simpson, Hall, Miller & Co. have taken a new lease of their store, 36 East 14th street, for eleven years from April 1st, 1888, with an option of ten years more after the expiration of the lease. The store will be handsomely refitted, and its conspicuous place opposite Union Square will be rendered still more attractive by the handsome display in the corner window. The location is central, and quite convenient to out-of-town buyers.

—Gile J. Willson died at his home in Reading, Pa., on January 24th, of typhoid fever. He was sixty-four years old, and was well known in the jewelry trade, having established the business carried on at present by his son Charles, and also the spectacle factory now conducted by his son Thomas. Mr. Willson retired from active business about three years ago, leaving it to his two sons, who, with one daughter and the wife, survive him.

The Susquehanna division of the Erie Railroad is to have the following named persons for watch inspectors: R. B. Freeman, at Blossburg, Pa.; A. M. Bronson, at Susquehanna, Pa.; A. McHenry & Co., at Hornellsville, N. Y.; Chas. P. Starr, at Owego, N. Y.; E. N. Sanford, at Binghamton, N. Y. There were also appointed later: Mr. F. L. Sutliff, at Susquehanna; Mr. D. D. Knapp, at Waverly; La France & Wise, at Elmira, and Mr. D. F. Fero, at Corning.

—S. B. Parmelee, who, for the last twenty years, was the western traveler for Simpson, Hall, Miller & Co., was found dead in his bed at his home in Wallingford, Conn., on Sunday morning, January 22d. He was about sixty years of age, was well known throughout the western section of the country, where he was familiarly called "Uncle Sam," and as a salesman was very popular and successful. He leaves two daughters and one son well provided for.

—The order issued by the Erie railroad company respecting the watches carried by their engineers and conductors, will be put into operation on the 12th of February. It is estimated by reliable authority that the new order will require at least 2,000 new watches. These have to be bought and paid for by the employees themselves, as the company only appoints its inspectors, and the employees have also to pay for all repairs to their watches. It is said that the new order is looked upon as a hardship by many of the men, as they fear that their watches, some of which may have cost several hundred dollars, will be condemned by the inspectors.

—The vial filler, patented some years ago by Mr. Joseph K. Nye, of New Bedford, Mass., has just been completed and put in working order at the factory of Mr. William F. Nye, for filling the little bottles with the different brands of his famous watch, clock and chronometer oils. It will be the means of saving both time and labor. The machine consists of a brass plate, covered by an enclosed pan, which has 144 tubes leading from the pan. The tubes are about 10 inches in length and each one is fitted with a self-acting lever, which when placed in bottles to the proper depth is operated so as to allow the liquid to flow into these vessels, which are placed in trays of the proper dimensions. The bottles are filled exactly alike and the filler is so adjusted that it will fill 30 gross an hour. It is arranged for one, two and three ounce bottles. The operation of filling is accomplished at a stroke of a lever, which lets in the oil from a tank in the third story, conveyed to the machine through pipes. Underneath the filler is a wire frame upon which the bottles rest while in process of filling, and in case of a broken bottle the oil runs between the wires into a pan, and thence drops into a tank below. All waste is thus saved, and the oil again pumped into the tanks overhead for filling. This system of bottling is perfect and is not duplicated in this country, Mr. Nye owning all the patents for carrying out the same.

—The sensational assignment of Payne, Steck & Co., immediately after the holidays, with liabilities of almost \$150,000, is one of the latest as it is the most conspicuous of all recent failures in the trade. All sorts of rumors and reports were prevalent after the failure, concerning the members of the firm, but later developments leave little doubt that William H. Payne is the responsible one for all the transactions connected with its failure. Mr. Payne is a young man, only twenty seven years of age, and before starting in business with Mr. Steck, in July, 1884, held good positions with J. T. Scott & Co., and afterwards with Jos. Fahys & Co. In each of these positions he proved an able and shrewd business man. When, therefore, he and Mr. Fred. D. Steck, who had been a popular traveler for J. T. Scott & Co., formed a partnership in 1884, they were immediately accorded a liberal amount of credit and their success became assured. Their business during the year 1887, too, was greater than ever before, and when the assignment became known suspicion was aroused among the creditors. After making the assignment, which was the work of Payne alone, Payne went to his home in New Jersey, where he knew he would be free from immediate arrest. The sheriff was put in possession of the stock at 179 Broadway, but when the safes were opened comparatively few goods were found in them. Anxious creditors came to the office inquiring after their goods which they had given Payne on memorandum a few days before Christmas, but few were found. Replevin suits were instituted by several firms who recovered a meagre part of their goods. The sheriff sold out the remaining stock at auction and realized less than \$15,000 for it. Since then Payne was arrested at the instance of several creditors and each time released on bail. The amount of bail required, which grew daily in proportions, only brought to light some new friend of Payne, hitherto unknown, who went on his bond secured his release, so that he passed but a short time behind the bars. But the creditors recently held a meeting in the Board of Trade rooms and decided to prosecute him criminally as far as possible. A subscription list was made up and the creditors propose to carry the case to a completion. It is very fortunate for the trade that this failure occurred at this season of the year, and it is to be hoped, in the interest of trade morality that a compromise will not be effected. No creditor can complain at this season, as at any other, that he cannot give up any time to attend to Payne's prosecution, for all have plenty of leisure.

—Switzerland sent 28,925 watches to Japan in 1886.

—The Trenton Watch Company has increased its capital from \$250,000 to \$300,000.

—Mr. Louis Oberdorfer, of Louisville, Ky., has bought out the business of Mr. G. Felsenthal.

—Major & Carson, of 40 Maiden Lane, have dissolved partnership, and Mr. W. E. Major will continue the business.

—Mr. Morris Ginsberg, of 66 Nassau street, failed in December. Liabilities, \$38,624; nominal assets, \$37,721; actual assets, \$16,451.

—Mr. Charles Jacques, importer of clocks and bronzes, etc., reports a heavy business during the past month, especially in his line of onyx and marble clock cases which fit American movements. Of these he has about a hundred new designs.

—Mr. A. H. Shultz, of Minneapolis, Minn., was robbed of several hundred dollars' worth of stock early in January by a young druggist in the neighborhood, who, when captured, said that he had been on a spree when he committed the theft. Some of the goods were recovered.

—Mr. A. Peabody, formerly with Marx & Weis, has gone into partnership with his father, under the style of A. Peabody & Co., at 182 Broadway. They are the patentees of certain patterns of watch cases which they will manufacture. They will also deal in loose diamonds.

—Evans & Conwell, of Los Angeles, Cal., lost about \$1,000 worth of their stock by robbery committed early in January. The firm keep other lines of goods besides jewelry, but the larger part taken was in jewelry. The robbery was a very bold one, and the perpetrators have not been discovered.

—Mr. George F. Kunz received a cablegram on January 19 from St. Petersburg, informing him that a piece of the krasnoslobodsk Siberian meteorite, which is said to contain microscopical diamonds, has been shipped him for the purpose of exhibiting it at the annual meeting of the New York Microscopical Society, which will be held on February 24 at Trenor's Lyric Hall, New York City.

—The property and business of the Morgan & Headley Optical Manufacturing Company, of Philadelphia, was sold on the 4th of January to a syndicate of its creditors, who are engaged in effecting a reorganization for the purpose of continuing the business as heretofore upon a larger scale, with new machinery and processes of manufacture. Mr. Clement B. Bishop is acting as superintendent at present, and will receive and fill all orders.

—Carter, Sloan & Co. closed their factory for about ten days in January, during which time they took their annual inventory of stock. They have since been actively preparing for the coming season by the production of new designs, which will make their appearance on the market during the present month. The inventory showed a satisfactory business for the past year, and the outlook seems to justify the large preparations they have made for a growing business during the coming year.

—The Hampden Watch Co., Springfield, have deferred the moving of their plant to Canton, O., till late next spring or early summer. The reason is that the large building which is being erected for them in that place will not be finished till that time. When the company move they intend to take the greater part of the machinery with them and as many of the 500 hands as will go. The managers of the company say that they have made no arrangements yet for the disposal of their shops in Springfield.

—The firm of Stuart & Shepard, 2 Maiden Lane, have dissolved, Mr. John E. Shepard retiring. The business will be continued by Silas Stuart & Co. Mr. John E. Shepard is one of the old landmarks in the trade. He was born within three blocks of Maiden Lane, and about all of his business life has been spent in the vicinity of that thoroughfare, a fact of which Mr. Shepard is proud. His business future is at present undecided, but whatever it may be he can be sure the good wishes of his many friends attend him.

—Sussfeld, Lorsch & Co. have now the entire upper stories of their building, No. 13 Maiden Lane, which became necessary on account of their increasing business. The floor formerly occupied as the precious stone department by Henry Dreyfus & Co., has been fitted up with bookkeepers' desks and shelves for the firm's miscellaneous stock of materials, optical goods, etc. Henry Dreyfus & Co. have moved their department to 25 Maiden Lane, on the first floor, which was entirely refitted in modern style, such as befits the character of a first-class diamond house. The new office has special accommodations for the comfort and convenience of customers.

—Montgomery & Co., of 105 Fulton street, have issued an illustrated catalogue of 300 pages, of materials, tools and jewelers' supplies, which will be mailed on receipt of 16 cents.

—Berthiaume Bros., of Minneapolis, Minn., made an assignment January 2d to Wallace W. Waite. The liabilities are \$7,500 and the assets \$3,132.

—One of the three thieves who broke into the establishment of Springfels & Weil, of Buffalo, recently, has been captured. He is Charles Leavitt, a notorious cracksman. He has been sentenced to ten years in the State prison at Auburn.

—The St. Louis Watch Case Company was recently incorporated in St. Louis, with a capital stock of \$20,000, half of which has been paid in. The incorporators are Isaac Swope, Louis Dariot, Jean ChevreLOT, Edward Chanpiat and Leon Longuet.

—We regret to announce the death of Mr. Francis Wallach, a gentleman formerly connected with the firm of A. Wallach & Co. He was well known in the trade, and though he retired from actual business in 1875 he had always kept up his trade acquaintances. He died of apoplexy, and was sixty-seven years of age.

—Robert Glaesner, a jeweler in the employ of M. S. Smith & Co., Detroit, Mich., committed suicide by hanging on the 2d of January. His wife died eight years before, and he was very low spirited in consequence. Recently a younger son became a hopeless cripple through a disease of the hip, and the father could bear his troubles no longer. His case was a sad one, and he left all his possessions to his crippled son.

—A man recently entered the store of D. K. Hatfield, in Pottstown, Pa., and presenting a pistol at the head of the clerk in charge, ordered him to keep quiet. Two of his pals then entered the store, and proceeded to rifle the show-cases of watches and other valuable goods. A son of Mr. Hatfield, who was in the rear part of the store at the time, hastened to arouse the neighbors, but when they came the thieves had escaped with their booty.

—Walter Sams, of Omaha, Neb., who recently gave a chattel mortgage for \$13,000, was arrested at the instance of one of his creditors on a charge of obtaining goods on false pretenses. He purchased a bill of goods amounting to over \$1,000, recently, and, shortly afterwards not over \$100 worth could be found in his store, though he had not sold the remainder. Sams was bailed for \$10,000, and is to have a trial soon. Some of his creditors met on January 3d in the Board of Trade rooms, and the secretary was instructed to write the attorney in Omaha to try to have the chattel mortgages set aside.

—Hamrick & Son, who failed recently, have tried to settle with their creditors for 50 per cent. of their claims. At a meeting of the firm and their creditors, held at the Astor House on January 9th, the assets were said to be the same as the liabilities, viz.: about \$90,000. But they claim that about half of the assets is borrowed money, which must shortly be repaid. This firm was composed of Oliver M. and Winifred Hamrick, and up to the time of the late failure has always stood high in the trade. They claim that their embarrassment is merely temporary, and expect to continue in business.

—Mr. P. J. Duerr, of 288 Broadway, who was recently swindled out of three watches by a waiter with whom he was slightly acquainted, and instituted criminal proceedings against him, had his case thrown out of court by the trial justice, who held that it was a civil case, on the ground that the prisoner had partly paid for the goods alleged to be stolen. It seems that the waiter came three times to Mr. Duerr, each time getting a gold watch, on which he left a small deposit. After he had the three watches, Mr. Duerr began to feel uneasy about the honesty of his customer, and an investigation showed that he had pawned two of the watches and sold the third. The waiter was set free on the decision of the court.

—A meeting of the creditors of N. Matson & Co. was held at the rooms of the New York Jewelers' Association, on the 17th of January, at which nineteen were represented. A committee was appointed to request the court in Chicago to retain the present receiver, Mr. Edward Forman, to protect the interests of the general merchandise creditors. Mr. Forman was appointed at the instance of the judgment creditors, and he would be discharged after the completion of his duties in their behalf; but the court has signified its willingness to re-appoint him on behalf of the merchandise creditors if so requested. A statement was made at the meeting, as coming from the receiver, that a just inventory of the stock shows that there remains \$140,000 worth of goods, while the indebtedness to the merchandise creditors is but \$70,000.

—The firm of Westen & Co., of 18 East 14th street, has been succeeded by Mr. F. H. La Pierre.

—Mr. Philipp Zellenka, of 39 Maiden lane, has taken his son Edward into partnership, under the firm name Philipp Zellenka & Son.

—Mr. Hiram W. McIntosh, of McIntosh & Son, Clinton, Ill., is dead. The business of the late firm will be continued by Mr. W. W. McIntosh.

—The *Pittsburgh Despatch* recently gave a lengthy review and history of the jewelry trade in that city, giving some interesting facts regarding several of the prominent firms there.

—Mr. E. E. Stillman, formerly with the New Haven Clock Co., is now the representative of the Pairpoint Manufacturing Co. in New York and vicinity, and in Boston, Philadelphia, Baltimore and Washington.

—Mr. J. B. Wood, as the representative of Mr. Charles F. Wood, sailed for Europe last month on the *Normandie*. He intends to make some purchases of gems and precious stones, which will shortly be offered to the trade.

—Mr. Wm. S. P. Oskamp, who was manager of the business of Mr. C. Oskamp, Cincinnati, for fifteen years prior to the death of the late proprietor, withdrew from the firm during the past year, and has no connection with it at present.

—The Ansonia Clock Co. has just placed a pretty little clock upon the market, which it is expected will prove popular. It is but two inches across the dial, the movement is well finished, having an alarm attachment, and its size and appearance are adapted to meet the wants of a large trade.

—The co-partnership between Mr. Byron L. Strasburger and Louis Strasburger & Co. expired recently, and a new firm was organized on January 17, composed of Byron L. and Louis Strasburger, under the firm name of Byron L. Strasburger & Co., for the purpose of carrying on the watch business at 15 Maiden lane.

—R. Wallace & Sons' Manufacturing Co. report that their trade, both in sterling and plated ware, last season was very satisfactory. Their new factory for the sterling silver department was completed last fall and is now in good shape. For the coming year they are bringing out many new designs, some of which may be seen shortly at their salesrooms in this city.

—We desire to thank Lapp & Flershem, of Chicago, for their beautiful catalogue, with the name of THE CIRCULAR in gold letters on the cover. The catalogue is very handsomely gotten up, illustrating in good style all sorts of goods carried in a jewelry store, and is intended to supplement the stock of the retail jeweler. It has no name in it, so that the retailer can show it to his customer without any disadvantage to himself.

—We have received a communication signed "Subscriber," replying to a communication printed in our January number, and signed "Honesty." We desire to say to "Subscriber" that the language he uses is not such as can be admitted to our columns, or as passes current among gentlemen. If he desires to explain the transaction referred to by "Honesty" in a courteous manner, the use of our columns is freely tendered to him.

—Efforts are still being made by the citizens of Buffalo, N. Y., to raise the \$100,000 prize money which they intend offering to the inventor or inventors of the world for the best appliance, and also the most economical one, for utilizing the water power of the Niagara River at or near Buffalo, so that said power may be useful for manufacturing purposes throughout that city. Every inventor able to take so great a task should go to work to gain this prize.

—Mr. Henry Rowlands, of Brooklyn, late of Albany, N. Y., assigned last month, giving preferences for about \$18,000. He failed once before, in 1881, when his liabilities were about \$50,000, and his creditors received only about 30 per cent. of their claims. Several writs of attachment were issued against the stock shortly after the failure, but the Sheriff had not taken possession of the store owing to a legal technicality. The assets are not yet known.

—The Seth Thomas Clock Co. recently completed two clocks for the Chilean Government, to be used for astronomical purposes, and also to establish a time service in Chili similar to that at Washington. The clocks are well built and the parts are finished handsomely. The time keeping qualities are most excellent, and all the latest scientific improvements to secure the most minute exactness were put in. The company are proud of the clocks, and several local newspaper men have written them up most fully.

—S. Klaber & Co., of 223 West 51st street, who for several years have been supplying a few large art stores with fine Mexican onyx goods, have recently increased the out-put of their factory so that they are now able to offer these goods to the trade at large. This firm control the two quarries in Mexico from which two peculiar kinds of onyx are procured, the like of which is not found anywhere else. One is a mottled kind of light green stone with streaks of gold or brown running through it, the effect of which is indescribable, especially as in every new piece seen a new combination is presented, different from the last, yet just as beautiful and just as characteristic of this peculiar onyx. The other variety is even more beautiful than the last; for in it is presented all the colors in pleasing contrasts and delicate shades. Upon the polished surfaces of these two varieties of onyx the colors show beautifully, and when pieces of the onyx are artistically joined together in the forms of pedestals of different heights, tables of all conceivable shapes and sizes, and even in lamps and vases for mantel ornaments, their beauty is beyond description. S. Klaber & Co. have had such great success with this line of goods recently, selling all they could produce to a few large jewelry and art houses, that they determined to increase their force of artists and polishers and to make up a general line for the trade. The goods are very expensive and it is presumed they will sell mostly in the large cities, but the peculiarities of these two varieties of onyx controlled by this firm make their goods desirable.

—Some enterprising business men of Newark, N. J., among whom are Mr. Alex. Milne and other prominent jewelers, have started a Trade and Commerce Club in that city, for the purpose of bringing business men into closer social relationship. The club will also aim to promote the business interests of Newark, and in its club house, which it proposes to own, it will have every convenience for members to receive and entertain their customers. Newark is one of the jewelry manufacturing centers, and the club is looking largely to the jewelry trade for its membership, but other trades are also expected and invited. The club is to be incorporated and to have a capital stock of \$75,000; some of this is already subscribed for.

—The following letter is printed in the *Elgin Courier*:

The enclosed clipping is taken from the December number of a paper published in New York, and as you will notice is taken from your paper, I do not know of what date. The statements made are not true. First, I am not a member of the "Big Six." Second, if you will read Mr. Dueber's circular more carefully you will see he does not accuse the Elgin Company of selling watches to the clothing trade, etc., but insinuates, and he dare not make the statement that we sell or ever have sold to anyone except the legitimate jobbing jeweler, the same as all members of the Manufacturers' Association, and the movement companies co-operating with them do, and to which all reputable case makers, excepting gold, belong so long as they do not violate their agreements with the association.

Yours truly, T. M. AVERY.

—The importations of jewelry and manufactures of gold and silver for the month of November were valued at \$81,241, as against \$74,664 on the corresponding month of last year; of precious stones and imitations, not set, \$539,150, against \$648,042 in November, 1886. For the eleven months of this year, ending November 30, the value of the jewelry and manufactured gold and silver imported was \$877,265, against \$837,314 in 1886; of precious stones and imitations, not set, \$10,413,438, against \$8,861,231 the preceding year. The falling off in the importations of precious stones and "imitations" in November is probably due to a decreased demand in this country for the latter. But that the Treasury department should classify "imitations" with "precious stones," is as absurd as it would be to classify oleomargarine with first quality Orange county butter.

—We would call attention to an advertisement in our Special Notices, of a jewelry store for sale in one of the Middle States. The advertiser is a gentleman who has long been well known in the trade, and has achieved success in the store he wishes to sell. His store is the largest in a town of 15,000 inhabitants, and has a patronage which is constantly growing. The reason he wishes to sell is that he has other important financial ventures in a southern city which will require his entire time, and he wishes to dispose of this store to a responsible and reliable person. The store can be bought for \$20,000, part of which will be required in cash, and with it goes the good will, which, after the reputation achieved by the present proprietor, is very valuable. The character of the names attached to the advertisement is a sufficient guarantee of the reputation of the gentleman wishing to sell. Applications to buy the business should be addressed to either of these firms.

—Mr. L. Hammel arrived from Europe early in January on the *Fulda*.

—Mr. M. Richardson, representing Victor Bishop & Co., sailed for Europe last month.

—A. Meyer's Sons, opticians, of 93 William street, were damaged by fire on Jan. 25th.

—Mr. Henry E. Oppenheimer was married on January 26th to Miss Lena Davidson.

—Mr. R. A. Kipling sailed for Europe the last Saturday in December on the *Champagne*.

—Mr. J. Bernstein, formerly of Chicago, has opened an office in New York at 21 Maiden lane.

—The Aurora Watch Co. turned out about one hundred watches a day during part of last month.

—Thomas O. Haydock, of Philadelphia, Pa., failed recently. Liabilities about \$10,000; assets, \$5,000.

—The fitting out of travelers is now in order—query: Is a traveler's outfit complete without a Lee fire escape? See adv. p. 43.

—M. Goodman & Co., of Memphis, Tenn., were recently attached by the sheriff and their store closed. Their liabilities are put at \$20,000, and assets at about one-half that amount.

—Mr. James A. Montgomery, of Los Angeles, Cal., moved into his new store on January 15th, and has taken his brother, Mr. George A. Montgomery, in partnership. The new style is Montgomery Bros., 18 North Spring street.

—The Canadian Association of Jobbers gave their first annual banquet on January 17th in the Queen's hotel, Toronto, Ontario. Mr. T. H. Lee presided, and the guests were principally the members of the association from the eastern section of Canada. The banquet was made more enjoyable by witty speeches and good music.

Fred I. Marcy & Co. show in their advertisement in this issue an illustration of their "Sensible" collar button in the position where it holds the scarf in the proper place. They have now commenced the manufacture of their new style of lever back, which, by a peculiar arrangement of the lever, gives plenty of space for the insertion of the button into the cuff, while it has a very short post when closed. The new style of back, which was patented recently, promises to be very popular, because while the action is very simple and easy, the improvement over the old style is great. It has also been advertised extensively, and curiosity as to what the new back is like has been aroused among the trade.

—The year just closed has been an interesting one in the jewelry trade in Attleboro, Mass. There have been 179 deaths reported among the jewelers, 131 fires, 187 failures, 146 places have been entered and property stolen, and 43 unsuccessful attempts to rob different places. There have also been about 150 new firms established, and 23 burglaries committed, 54 attachments levied, 314 changes made in firm names, 350 firms have sold out, 176 dissolutions of copartnership, 105 swindles, 73 suits, 4 strikes, 2 new trade organizations formed, 8 mines discovered, 18 absconding jewelers, 51 cases of larceny from employers, 10 missing jewelers, 7 smugglers detected, and 42 firms who had resumed business.

—The Chicago Jewelers' Association had their eleventh annual banquet on the 5th of January at Kinsley's, in that city, where all the enterprise of the West met together to have a good time. The affair was a most brilliant one in every respect. The tables were laid in grand style, and the rarest of flowers lent their perfume, the finest of instrumental and vocal music their charm; the most eloquent men spoke in their silver tones, and the richest of wines and delicacies brought their comfort, and the occasion surpassed all former similar ones. The *menu* was a work of art, and after its several pages had been discussed and the items upon each page duly noted in the minds and hearts of all present, the president, Mr. L. W. Flershem, opened the speechmaking portion of the banquet in a few well-chosen words, introducing at length the mayor of the city, the Hon. Mr. Roche. The mayor responded, as a Chicago man would be expected to respond, Chicago being the subject of his toast, and the applause at its conclusion was vociferous. Other speakers followed, of greater or less importance, some in prose and some in rhyme; some humorously and others more seriously; and the end came only too quickly. The banquet committee was composed of Mr. Otto Young, chairman; Mr. L. W. Flershem (*ex-officio*), and Messrs. O. W. Wallis, M. N. Burchard, Grove Sackett and J. V. Ridgway. These gentlemen worked hard in their preparations, and upon the great success of the banquet they deserve and THE CIRCULAR hereby tenders its congratulations.

TO REMOVE THE BALANCE.—The first thing to be done is to remove the balance spring and roller; then get the balance off the staff. This is a job requiring great care, especially in American watches with cut balances; they are riveted on so tight that if great care is not exercised the balance will be distorted, and thrown out of true. Special tools should be provided for removing a balance if the watch is a fine one, but if a common affair, with a plain steel or uncut balance, the usual steel riveting-stake will answer. The special tool is a hollow stake, having a convex face with a hole in it, into which the stake will go loosely. There should be five or six of these stakes with a gradation of holes, so that they will catch the bar of the balance as near the shoulder of the staff as possible. Another precaution is to undercut the old staff where it is riveted to the balance. This can generally be done in a split chuck, as they usually run true enough for this purpose; all we desire in the present instance being to weaken the clinch of the riveting by which the balance is attached to the staff. These precautions will enable one to remove a balance and leave it perfectly true.

—The old and well known firm of Wheeler, Parsons & Hayes, of 2 Maiden Lane, has been succeeded by Hayden W. Wheeler & Co. the change taking place on the 1st of February, when the partnership expires by limitation. This firm, which for about a quarter of a century has held a leading position among the manufacturers and jobbers of jewelry, was originated about the year 1850, by Charles E. Hale. In 1853 Mr. Hayden W. Wheeler entered the employ of Mr. Hale as clerk, and was admitted as a partner in 1856, the style of the firm being changed to Charles E. Hale & Co. The business was continued under this name for ten years, until the death of Mr. Hale in 1866. Meanwhile Mr. L. A. Parsons entered the firm's employ in December, 1856, and Mr. Henry Hayes came in September, 1862. Both of these gentlemen were admitted as partners just twenty-five years ago, namely, on the 1st day of February, 1863. The name of Wheeler, Parsons & Co. was adopted as the style of the firm at the beginning of the year 1867, and in 1873 the name was changed to Wheeler, Parsons & Hayes. The firm have long been noted for their liberal dealings, and their success can justly be attributed to their business integrity and enterprise. The influence of the individual members of the firm has been great, and whenever used was found on the side of justice and progress. Mr. Parsons and Mr. Hayes retire from the firm on the 1st of February, just twenty-five years after they entered it, and they are to be congratulated on the great success they have achieved. Both gentlemen are well known to the trade, and their influence has often been felt in many trade organizations and reunions. Mr. Wheeler will continue the business in the same way at the same place. Nothing is changed but the firm's name, and the business which has been carried on so successfully in the same place for thirty-five years, will be conducted on the same principles as before. The goods with which the name of the old firm has been identified will be produced as heretofore, and new styles will be presented continually. The new firm proposes to be at the fore front of the battle in the future as it has been in the past, and will not be content with a second place in their line. While the trade will regret the retirement of gentlemen with whose names it has been familiar for so many years, it will rejoice that their mantle has fallen upon such deserving shoulders. The new firm has the best wishes of THE CIRCULAR for its permanent success, in which we are sure the trade will join.

THE WORKING DESIGNS.

—Our designs of jewelry in the last month's CIRCULAR attracted considerable comment from the fact that some of them were out of the ordinary run of designs. Our artist's plan is to produce designs that are new; to give hints that are really of practical value, while the design itself may not be more than a mere hint. In the present plate of designs will be noticed a hair-pin (No. 1) having an extra pin connected to it by a graduated link chain, each link provided with an ornamental pendant. Another design (No. 7) is a bar pin, having a chain and pin attachment, the chain fastened in the middle to the center of the bar pin, and a gem set in the swinging pendant. The other lace pin (No. 9) can be made in several ways, either having the side pieces, where the stones are set, swinging or stiff; or having a pin-tongue and catch put on the back of each. A link sleeve button (No. 8) is again shown, a little different in operation from the one shown last month, the present design being simpler of action. The ear-knob (No. 4), with a chain and pendent setting, while making an attractive ornament, also secures the safety of the nut at the back of the ear by means of the chain.



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No. 2.

THE JEWELERS' CIRCULAR AND HOROLOGICAL REVIEW.

OFFICIAL REPRESENTATIVE OF THE JEWELERS' LEAGUE, THE NEW YORK JEWELERS' BOARD OF TRADE, AND THE JEWELERS' SECURITY ALLIANCE.

It is also the Recognized Exponent of Trade Interests.

A MONTHLY JOURNAL DEVOTED TO THE INTERESTS OF WATCHMAKERS JEWELERS, SILVERSMITHS, ELECTRO-PLATE MANUFACTURERS, AND THOSE ENGAGED IN THE KINDRED BRANCHES OF ART INDUSTRY.

SUBSCRIPTION.—To all parts of the United States and Canada, \$2.00 per Annum, Postage Paid. To all Foreign Countries, \$3.00 per Annum, Prepaid.

All communications should be addressed to

SETH W. HALE, PRES'T,
THE JEWELERS' CIRCULAR PUBLISHING CO.,
189 BROADWAY, NEW YORK.

Advertising rates made known on application.



A full Index to Advertisements and Table of Contents will be found on Page 5 of this issue.

ONE of our English exchanges recently published an account of a clock that would run 240 days, and commented on it as something wonderful. We have had in our dining room a little clock made by the New Haven Clock Company that runs four hundred days. At least, it is said to run that number of days, but we prefer to wind it every Christmas. It is what is called a torsion movement, and we can testify that for four years it has run without stopping, and that it has never been wound except upon Christmas day each year. It keeps as good time as the average of clocks, and is a subject of curiosity to all visitors to the family. If a 240 day clock is so much of a curiosity abroad, the New Haven Company should send over a few samples of their 400 day clock.

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AN observer has been trying to ascertain the reason why men fail, and comes to the conclusion that some fail through timidity or lack of nerve. They are unwilling to take the risks incident to life, and fail through fear in venturing on ordinary duties. They lack pluck. Others fail through imprudence, lack of discretion, care or

sound judgment. They over-estimate the future, and build air castles, and venture beyond their depth, and fail and fall. Others, again, fail through lack of application and perseverance. They begin with good resolves, but soon get tired of that and want a change, thinking they can do much better at something else. Thus they fritter life away and succeed at nothing. Others waste time and money and fail for want of economy. Many fail through ruinous habits; tobacco, whiskey and beer spoil them for business, drive their best customers from them and scatter their prospects of success. Some fail for want of brains, education and fitness for their calling; they lack a knowledge of human nature and of the motives that actuate men. They have not qualified themselves for their occupation by practical education. There is another quite numerous class who fail for the purpose of making money at the expense of their creditors, but these should be classed with criminals rather than with unfortunate business men.

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THE reason given for not prosecuting the perpetrators of fraudulent failures is that the individual creditors cannot afford to lose the entire amount of their claims, and that they prefer to take what they can get to punishing the criminal. It is for the interest of the entire trade that this class of swindlers be summarily dealt with, and in order that this might be done, it would be no great hardship for the trade at large to tax itself to make up the sum that individual creditors would lose in consequence of prosecuting criminally instead of compromising for a small sum. In the case of Franklin, his indebtedness is stated at \$15,000, but the creditors would, no doubt, be glad to realize half that sum on their claims; if they have to sacrifice what they might recover, it would be a graceful thing for the rest of the trade to "chip in" and reimburse them, always provided the prosecution of Franklin results in his conviction. A sacrifice made in the interests of the entire trade and good morals ought not to be at the expense of two or three or a half a dozen of persons, but the loss should be shared by the entire trade. Where there is a mutuality of interest there should be an equitable division of the cost.

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THE strike of the coal miners identified with the Reading Railroad collieries had not been adjusted at the present writing. The strike was entered upon by the miners in sympathy with the strike of the railroad hands, and in defiance of a written agreement entered into with their employers several months ago. The railroad strike ended in the total defeat of the strikers, but the miners kept theirs up on their own account, determined to force the company to pay a higher price for mining coal than any of their competitors are paying, and more than the miners had agreed to work for. Both sides are determined, and there is no appearance of the struggle being near an end as we write. A vast amount of suffering has resulted to

the miners and their families, and some large iron industries that were dependent upon the Reading road for coal have been obliged to shut down, so that a large number of workmen have been thrown out of employment. Bradstreets recently printed a "strike record" for 1887, in which it is shown that 200,000 men were on strike during the year for various lengths of time, and that they lost in wages \$13,500,000, and in not a single instance were the strikers successful. Add to the loss of wages the sum expended during the strikes by the workmen and the suffering they and their families were subjected to, and the record is a most disastrous one for the strikers. The compulsory method of dealing with employers does not seem to be very successful.

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COMPLAINT continues to come in from the border in regard to smuggling, and it is alleged that women are the greatest offenders. It is estimated that half a million of dollars are laid out annually in Detroit for dutiable goods that find their way illicitly into Canada, to say nothing of the amount of smuggling done at other points. Women are accused of being extensively engaged in transporting these goods, their mode of dressing affording ample opportunity for concealing even large packages of valuable goods. The Canadian police are denounced for their inefficiency, and are even suspected of complicity with some of the favored smugglers. The trade is said to be very profitable for those who succeed in evading the authorities. Canada ought to move over into the Union and so do away with customs duties on the border entirely. We presume our merchants have as good cause of complaint in this matter of smuggling as their Canadian brethren, for there are many goods brought here from Canada that never see the Customs House. Every American who visits Canada feels it incumbent upon him to lay in a liberal supply of clothing, for such goods are much cheaper there than here, and large quantities of cloth are smuggled over. It is only a question of time when Canada will be annexed to the United States, so that it is hardly worth while to make a stir about a little smuggling at present.

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THERE is a farmer out in Ohio who has gained considerable notoriety as a prophet. His name is Samuel Benner, and in his latest prognostications he says that the year 1888 will be a good one for business, and especially for beginning new enterprises. He says that this is the closing year in the cycle of low prices, being seven years from 1881, and is, therefore, the golden opportunity for laying the foundations for successful business enterprises. According to him, it takes about ten years to complete an up and down movement in general trade, and that now is the proper time for young men about to embark in a business career to "catch on." He argues that when the depressions which follow commercial crises reach their lowest limit, as determined by the price cycles, they afford the best opportunities for investment. That is all plain enough, if one could only be assured that he will not "catch on" at the wrong end of the cycle, and so catch prices on the down grade. Samuel, however, is so certain that now is the appointed time, that he says: "This is the opportunity for investors to open a mine, to build a furnace, to erect a mill, to build a ship, to equip a railroad and to make investments in agricultural, commercial and industrial occupations." He fails to tell us whose mine to open or where to get the money to invest in the other enterprises he mentions. Most of us are kept so busy scratching around to secure the means to obtain our daily sustenance that the question of investment does not agitate us particularly. Nevertheless we give the prediction of Samuel, but accompany it with the advice that every man had better be governed in his undertakings by good, sound business sense than

by the predictions of any alleged prophets, relying more on the profits acquired by his own energies.

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THERE were several robberies perpetrated upon members of the trade last month that would not have occurred, in all probability, had the victims been members of the Jewelers' Security Alliance. A certificate of membership in this organization affords greater security to a dealer than any amount of police protection, for the certificate, which is conspicuously displayed at all times, is a continuous notice to the criminal classes that the owner of it is under the protection of a powerful organization, whose sole object it is to hunt down and punish those who depredate upon its members. The Alliance commands the instant services of the best detectives in the land, and the moment a member of the Alliance is robbed, the whole detective force of the country, substantially, is on the track of the robbers. So unrelenting has the Alliance been in the pursuit of robbers, that a sight of the certificate of membership serves to deter them from the perpetration of a robbery they had contemplated. The membership costs but \$5 a year, and no dealer can afford to be without it. Any one is liable to be robbed at any time, and where the victim is a member of the Alliance, that body assumes all the responsibility and cost of detecting and punishing the depredators. This is an immense advantage to one who has been robbed, leaving him at liberty to go on with his business while others are guarding his interest. The sense of security one feels in consequence of such membership is worth far more to a dealer than the very slight cost. Every dealer in the country should belong to the Alliance.

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THE opposition to the Saturday half-holiday law assumed definite shape early last month, when the Clearing House and several of the commercial exchanges adopted resolutions condemning it and asking the legislature to repeal it. The law has been a dead letter so far as ordinary business has been concerned, but the banks and public institutions have been forced to observe it. This has made considerable confusion and caused much embarrassment to the prosecution of business. Manufactories, shops, factories, etc., have worked full time on Saturday as on any other week day, but when they came to deal with the banks they found that their business must be transacted before one o'clock. Where there is a large payroll to provide for on Saturday this has been found very inconvenient, while the transactions between banks and at the exchanges has been seriously interfered with. The probability is that the law will be repealed before the legislature adjourned. It was never demanded by any except a few sentimentalists, who thought that they would be conferring a great boon upon laboring men by reducing the number of hours of labor, forgetting evidently that wages would be adjusted to correspond to the amount of work done. Such has been the result of the law, and, as a consequence, in many instances the workingmen appealed to their employers for permission to work the full six days. The very men in whose interest the law was ostensibly passed were the first to seek the means of escape from its provisions. The natural laws of supply and demand will always evade any legislation that opposes them.

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WE ARE glad to note a change of programme on the part of the trade in dealing with persons who deliberately lay their plans to victimize its members. Charles B. Franklin, a dealer of Troy, New York, was recently arrested at the instance of the Board of Trade, and brought to this city to answer a charge of obtaining goods under false pretences. On being arraigned before a magistrate he was held for examination. The facts of the case as stated,

are that Franklin, who was a member of the firm of B. Franklin & Son, made a written statement to the Board of Trade, showing the firm to be in excellent condition, having but a small amount of indebtedness and large assets. On the strength of this statement he bought about \$15,000 worth of goods from various dealers on credit. He failed and it was found that he had sold his interest in the business to his brother for \$8,000; a warrant for his arrest was obtained and a detective from this city soon had him in custody. It is stated that this is the first time that a trade organization has undertaken a criminal prosecution. The creditors who are interested are involved to the extent of from \$500 to \$1,000 each, and have expressed a willingness to sacrifice the amounts for the sake of making an example of Franklin. The courts, we are informed, have held in previous cases that oral statements regarding one's financial condition do not constitute such misrepresentation as will warrant a criminal prosecution, but in this instance the statements were in writing and made to a recognized trade organization. Heretofore it has been the general practice for the creditors of an insolvent to compromise their claims on the best terms they could secure, without considering whether or not the failure was a deliberately planned conspiracy to defraud or a legitimate failure. By this means many a swindler has escaped justice and encouragement thus given to others to go and do likewise. In commenting last month on a case that had excited much indignation in the trade we said substantially that so long as creditors were willing to patch up a compromise with any rascally debtor who might take it into his head to swindle them, so long they must expect to be swindled by that class of persons. For years the trade has been virtually paying a reward for robbery by the practice of compromising the most barefaced swindling that could be perpetrated, taking a fraction of their just claim and setting the swindler up in business again with restored credit, and a stock of goods on hand that had cost him twenty or twenty-five per cent. of their value. Every such settlement was a temptation to other dishonest persons to attempt the same game, and at the same time exceedingly discouraging to the honest dealers who expect to pay dollar for dollar in the face of the competition of the man who had paid little or nothing for his goods. The prosecution and imprisonment of two or three of these professional bankrupts will do more to discourage the fraudulent failure business than all the resolutions and high moral utterances of all the trade organizations in the world. The criminal portion of our population has little respect for words, but the prospect of spending a few years in State Prison has a terror for them.

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THROUGH their own mutual life insurance organizations, members of the jewelry trade must take considerable interest in the subject of assessment life insurance. The multiplicity of these assessment organizations has led to the perpetration of innumerable frauds upon them. A case possessing many remarkable features was tried in this city during the present month. A man named Tyler died suddenly at a little town in Connecticut under circumstances that led to the belief that he had committed suicide. It turned out that he had secured insurance on his life to the amount of about \$300,000, mostly in assessment companies. He had been dissipated, unfortunate in money matters and was discouraged with life. He had to borrow money, in fact, to pay for the insurance. There were those to whom he was attached by ties of blood or pecuniary interest, and he conceived the idea of providing for them by obtaining a large amount of insurance on his life and then committing suicide. Two or three friends seem to have been in his confidence, and letters that passed between them were produced at the trial, as were also other letters showing that he had fully determined upon taking his life. When his death occurred one or two of the companies paid the insurance, but the majority of them refused. The beneficiaries under one of the policies brought suit against the National Benefit Society of this city, and it was understood that this was to be a test

case. The trial lasted a week, at the end of which time several distinct propositions were left to the jury to determine. They found that Tyler had committed suicide, that he was not insane at the time of doing so, and that he had deliberately obtained his insurance with the fixed determination to commit suicide, thus giving judgment in favor of the company. Other suits may be brought against other companies, but this is scarcely probable in the face of the testimony brought out on this trial. There are sometimes complaints that life insurance companies contest too many claims, but in view of the number of swindles that are attempted upon them, and the fact that the officers of these companies are only custodians of trust funds, they are in duty bound to do everything in their power to protect the funds intrusted to them. They would be false to the interests of their members if they paid every claim that might be presented without inquiry, and the members would speedily find that their insurance was costing them very dear. In this connection we desire to say that the jewelers have every reason to congratulate themselves on the careful manner in which their life organizations are conducted. We have had occasion to look over the annual reports of a large number of assessment companies, and we find that the cost in the jewelers' organizations has been less than in almost any other. This comes from the fact that the expenses are kept down to the lowest possible sum and the rate of mortality is favorable. Careful selection and low expense ratios are the chief factors to be cultivated in societies of this kind. There must also be unceasing watchfulness to prevent fraud being perpetrated in one way or another, for experience has shown that swindlers are full of resources to defraud life insurance companies. There has been a large book published showing how a large number of such frauds have been successfully committed.

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ALL successful business men concede that judicious advertising is essential, and that a liberal amount should be figured for this item in the regular expense account. There is not a wealthy business man in the country who has not testified at one time or another that he owes his wealth to the liberal use of printer's ink, combined of course, with good business management. A man may have the best thing in the world for sale, but it will be of little use to him unless he lets the public know he has it. While all business men concede the advantages resulting from judicious advertising, it is singular how their ideas vary in regard to it. One will refuse to advertise in the papers, preferring to send out circulars; another will not advertise in the dull season because business does not warrant it, and he must keep expenses down till business improves; another will not advertise in the busy season because he is overwhelmed with orders and could not fill new ones if he were to get them. The average business man does not give the subject intelligent consideration or govern his action in this regard by any well conceived ideas, but is influenced by the solicitor who calls on him or by the feeling of the moment. Advertising is an important matter to every business house, and should be given as careful consideration as any other subject that comes before them. A question that should be determined early in each year is as to the sum to be expended in advertising during the year; the next question is as to the mediums to be employed; the next, as to the time for advertising. These questions are governed, or should be, by the character of the business. If it is a retail dealer who is considering the matter, he wants to employ those mediums that go to the classes of persons whose patronage he desires. For their purposes the daily paper that circulates most extensively in private families is the medium they want. Yet there are daily papers in this city that circulate almost entirely in the tenement house districts, and an advertisement of a jeweler in such paper would be entirely wasted. There are others that are so filled with advertisements that any single announcement is buried under a heap of rubbish, and is of no value to the advertiser. A

clean, wholesome daily paper, with some literary pretensions, is unquestionably the best medium for the retail dealer to patronize. But for the manufacturer or jobber, who does not want the trade of the general public, but who wants to reach the retail trade, a daily paper is of no value whatever. The trade paper has been created especially for their use, and the retail trade has been educated to rely upon these mediums for the announcements of the manufacturers and jobbers. The publishers have especially cultivated the field in which they labor, and the success that has attended their efforts may be judged of by the character of the papers themselves. A trade journal is like a business house, it carries on its face the evidence of prosperity or the reverse. If one goes into a business house and finds an office boy in charge, he makes up his mind that the house is not doing much business; so if a trade journal is found thrown together in a hap-hazard way, its matter selected with a view to filling up rather than to serve any good purpose to the trade, it may be taken for granted that it is merely rattling around in a position it does not fill. The trade journal of all others should be judged by the character of reading matter it provides, for by that the character of its readers may be inferred. As to the time when advertising should be done, our experience tends to convince us that the persistent advertiser is the one who obtains the best results. He should contract for space by the year, changing the matter of his advertisement according as he wishes to call attention to his specialties. Readers of trade papers are in the habit of looking for new announcements in the advertising columns of their papers by the firms they are in the habit of patronizing, and when they want to look up something of interest to them they are disappointed if they find the advertisement has been left out. We do not expect that dealers are going to say to those of whom they buy goods that they saw the advertisement in THE CIRCULAR and so are induced to purchase, but we do claim that an advertisement running continuously serves to keep the name of the advertiser before the reader, so that when he needs to order the goods advertised he knows at once of whom to order. Some advertisers pretend that they can trace orders directly to a particular journal, while others bring them no trade whatever; this is an erroneous idea, for no one can tell the particular influences at work to direct trade as a rule. What the successful business man wants is notoriety in the particular direction he is looking for trade, and the medium that will give him that notoriety, regardless of special instances, is the best for his purposes. THE CIRCULAR is an old established journal, and has always received a fair amount of advertising patronage. In conversations with its patrons we are led to believe that the best results have been obtained by those whose advertisements appear regularly in each issue, for the reason stated that readers grow familiar with them and look for them on the receipt of the paper.

The Banking Error.



FOR the sake of young readers, says R. W., in an exchange, I may explain that the term Resilient (Latin *resiliens*, leaping or starting back; rebounding) Escapements is the name given to those escapements in which the backs of the fork, after it has been struck by the ruby pin, owing to the increased arc of vibration of the balance, moves out of the circuit or path of the ruby pin, and by means of a spring the lever immediately returns to its former position. The object of the escapement is to get rid of what is known as the banking error. I will explain what is meant by the banking error, and in so doing will refer to two extreme cases of it. Some time ago I repaired several English watches, known as Yate's patent, which were made by quite a notable English firm at Liverpool. They had very large and heavy balances, and very slow trains, 7,200 beats an hour. I found that these watches keep excellent

time in hanging and lying, but as soon as they were worn in the pocket and carried the motion of the body frequently exceeded that of the balance, which gave it an impetus and caused it to vibrate more than 700 degrees, and so strike the back of the fork, and cause the watch to gain enormously on its rate, sometimes twenty, forty and even one hundred minutes per day, which made the watch quite useless. In mentioning this bad characteristic of Yate's patent, I ought not to omit a good characteristic of this watch. It is this: the slowness of the train reduced the friction of all the parts to a minimum, and while it is difficult to get a mainspring *strong* enough to a watch that has a heavy balance and 18,000 vibrations in the hour, so I found it difficult to get a mainspring *weak* enough in order to avoid striking the banking in Yate's patent. The other example of banking error to which I will refer is in a best quality of a foreign watch, which had a light balance and quick train, 18,000 beats per hour; there being no stop work to the watch the extreme tension of the mainspring caused the balance to bank furiously, and in one minute the watch gained about fifteen seconds, though it was a first quality adjusted watch.

Make the escapement resilient, and so remove the banking error, and you will open a new era in watch making. At the present time there are several forms of resilient escapements which I need not describe, save that they all contain one fault, viz.: the fork is so arranged that when the increased vibration of the balance causes the ruby pin to remove the fork, until the ruby pin rests on the point of the fork, it will then stop the watch, and an escapement with such a defect is of little or no use whatever.

Jewelers' Protective Agencies.



COMMERCIAL agencies are very good things in their way, no doubt, and, we presume, are valuable aids in the transaction of general business. But such agencies cover too much ground, and are too diffuse to be thoroughly and entirely trustworthy in any special field. We presume most of the large houses in the jewelry trade are subscribers to the principal commercial agencies, and yet we are assured by some of them that they have never derived one-half the benefit from them that they have from the Jewelers' Board of Trade during the few years of its existence. The reason is that one is general in its operations and methods, while the other works in a special field and directs all its energies to cultivating that field thoroughly. Each member of the Board of Trade has a particular interest in its welfare, and is in daily communication with its officers, giving and receiving information, partly from a selfish motive, but mainly to give such aid as he can to make it a success and the very best source of information on trade matters. The New York board has done remarkably good work since it was organized, and each year has seen it growing in strength and usefulness. Within the past few months it has rendered service to the trade that would fully justify its maintenance if it had never done anything else. The vigorous measures it has inaugurated for the punishment of some fraudulent bankrupts, and the exposures it has made of their practices has been worth many thousands of dollars to the trade. It has also given many a warning regarding the standing and mode of life of debtors that has resulted in putting creditors on their guard and saving them from loss. No general commercial agency could have rendered this service, for they do not possess the knowledge regarding the special features of the trade that would have made it possible for them to do so. The Providence Board of Trade has rendered equally good service to its members, having been the means of saving them many a dollar by the thoroughness it has shown in obtaining information and in sounding notes of warning. All such organizations should have the unanimous support of the trade, and every

member should contribute his share towards making them all-powerful for improving the conditions under which the jewelry business is conducted.

The New York Jewelers' Association is one of the oldest organizations formed for the mutual benefit and protection of its members. It includes a large number of prominent houses, and the information obtained and exchanged has been of the greatest value to those interested. It has offices in the Mutual Life building on Broadway, where the secretary and a corps of clerks are constantly engaged in correspondence and classifying the information in their possession. The records of this office contain some interesting histories of business men, some of which are liable to be called for at any day. The Association has done and is doing a very important work in protecting trade interests.

The Jewelers' Security Alliance is another special organization within the trade that has accomplished great good in its way. Its purpose is to save its members from the depredations of burglars, the most dangerous class of criminals that preys upon the community. When a member's store is broken into, the best detectives to be obtained are secured and instructed to hunt down the thieves at any cost, and to accept no compromise until they have received their full meed of punishment. The Alliance has been so successful in capturing and punishing burglars that these persons have a wholesome dread of it, and a certificate of membership in the Alliance conspicuously displayed in a store is notice to depredators that they will be relentlessly pursued, and has unquestionably saved many stores from robbery. Indeed, this has been admitted by some of those who have been captured and are now in confinement for other offences. In case the store of a member has been broken into the Alliance assumes all the cost of tracing up and prosecuting the criminals, thus relieving the individual sufferer from incurring a heavy expense immediately on top of his loss by the robbery. The membership of the Alliance is increasing steadily each month, but it should include every member of the trade, for it furnishes a degree of protection that can be obtained in no other way. The jewelry trade offers so many temptations to the criminal classes, that no measure of precaution calculated to prevent their depredations should be neglected. What with efficient Boards of Trade to watch over the scoundrels within the trade and the Alliance to look after those who are on the outside, jewelers have the opportunity to protect themselves pretty thoroughly from loss if they only avail themselves of their opportunities.

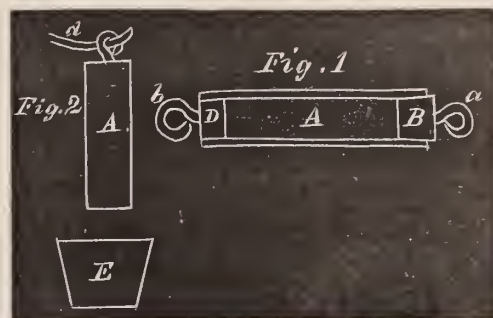
Advice to Watchmakers' Apprentices.

BY A MAN WHO HAS SPENT TWENTY YEARS AT THE BENCH.



THE PROCESS of case hardening is one which can be made of great use to jewelers for many purposes, and still very few know how to properly do it. Most of the Swiss watchmaker's tools are only case hardened. For many parts of machinery subject to concussion parts will stand much better if made of iron and case hardened than if made of steel. For the simple reason, the outside of a case hardened piece of iron can be left file hard, while all the inner portion retains the strength and tenacity of soft iron. For instance, a gun or pistol hammer will stand repeated strokes if made of iron and case hardened than if made of steel. For the simple reason if made of steel and left hard enough to do the work required, would break, and if soft enough to not break, would not be much better than iron. But with the case hardened iron the article would be both hard and strong. There are many receipts given in various treatises on metallurgy for case hardening, but like most popular receipts are little to be relied on. I recall one from no less a source than Ures' Dictionary of Arts, where the receipt for case hardening

reads: "Cow's horn or hoof is to be baked or thoroughly dried and pulverized. To this add an equal quantity of bay salt, mix them with stale chambréley or white wine vinegar; cover the iron with this mixture and enclose it in an iron box, lay it on the hearth to dry and harden; then put it into the fire and blow until the lump have a blood red heat; no higher, lest the mixture be burnt too much. Take the iron out and immerse in water to harden." Another process given in a technical work considered high authority, gives a process containing leather shavings and six other ingredients. The first formula given above from Ures' Dictionary mentions "bay salt," but what bay salt is is not told; if it was common table salt why not say so at once. I am led to speak of this for the reason we have too much of this sort of thing. Our mechanics have only in few cases the proper technical training. I remember only a few years ago a regular little farce about soldering fluid; many would not use zinc dissolved in muriatic acid, but lauded to the skies chloride of zinc dissolved in alcohol, not dreaming that chloride of zinc was identical with the muriate, only a different name. We have another class of men who need touching up, and these are the ones trying to introduce the metric system of the French, begetting a complication ending no one can tell where. For instance, screws made to such a standard obligates a total and entire change of everything; dies, taps, all have to be changed to conform to a standard that is conceded to not exist. The standard French meter was supposed to be one ten millionth part of the distance of the equator from the North Pole measured on the meridian of Paris, and was equal to 39 37 inches. It is now well known the measurements were not correct, but its admirers claim it can always be established by comparison with the



English yard. If the metric standard is to be regulated by the English yard, why not use the English yard at first and have done with it? If we need small and delicate decimal parts, let them be of the standard inch; everybody knows how much an inch is, and can conceive what the $\frac{1}{1000}$ part of one must be; but a millimeter is an obstruction to the average mechanic—and should be. Only fancy a man who owns a lot 25x125 feet to have his deed re-issued in meters and decimals of a meter. If he had no more ground he would "have heap more figures," as the Chinaman would say. But to resume our case hardening. Iron to be case hardened should be of the finest possible quality, free from flaws and perfectly homeogenous throughout. The process, stripped of all mystifications, is simply converting the surface of the iron into steel, and to do this we have to supply certain substances in connection with the proper conditions. The substance to be supplied is carbon, and the conditions are the iron shall be protected from oxidization while it absorbs the proper per cent. of carbon. The best substance, as far as known to the arts at this day, is bone dust; simply ground bones. The best quality is to be obtained of those factories where they make bone buttons, toothpicks and the like. Commercial bone dust is apt to be badly adulterated. For small experiments, a rasp or coarse file will produce enough in a short time, and where any quantity would be required, an order through any first-class drug house will reach the parties who produce it. A small bone dust mill does not cost so very much. The process consists in packing the articles in a wrought iron box with fine bone dust, and heating box and all to a cherry red heat for from 3 to 36 hours, according to the depth to which it is wanted the conversion of the iron into steel to extend. At the

expiration of 3 hours the steeling process will have penetrated about $\frac{1}{8}$ of an inch, and at the end of 36 hours the coating of steel will be fully $\frac{1}{16}$. The bone dust gives all the chemical ingredients for the process, as there is glue enough to furnish the free carbon, and the red heat converts the bone into bone black or animal charcoal which prevents the iron from oxidizing. A simple form of box for case hardening is shown at *A* fig. 1. It consists of a piece of heavy wrought iron tube of such a diameter as will readily receive such articles as are to be case hardened. At one end is welded a plug of wrought iron as shown at *D*, fig. 1. To the opposite end is fitted a loose plug *B*. The rings *a b* are tapped into *B D* for convenience in handling. The articles are packed with bone dust in the interior of the tube *A*, and the plug *B* put into the end and luted with a paste of water and whiting. After the tube *A* has been heated in a furnace or forge for the desired length of time, it is removed from the fire and the plug *B* taken out by pulling on the ring *a*. A convenient dish of water is provided, and the tube *A* taken and held by a poker inserted in the ring *b* over the water, when a few slight taps or blows on *A* will discharge the articles to be hardened into the water. The outside of the case hardened articles will now be found of a silver whiteness and as hard as a file. Very small articles like watch keys, screws and the like, can be case hardened by simply heating red hot, after coating them with a paste made of yellow prussiate of potash and water. A better method is to mix fine brick dust or loam with $\frac{1}{2}$ its weight of the yellow prussiate of potash; to this add as much in bulk of fine charcoal. Then pack the box *A* with the articles to be case hardened and the mixture just described. At fig. 2 is shown the method of dumping. The box *A* is held over the bucket of water *E*. The fine charcoal prevents oxidizing. Articles case hardened by the yellow prussiate process are not as tough, nor is the steely coating as thick as the bone dust method.

Benefits of Trade Organizations.



HERE HAS been a great deal said lately about commercial "trusts," formed by manufacturers in different lines to protect themselves from the abuses engendered by excessive competition and over-production, and certain demagogues in Congress have tried to make a little cheap notoriety by demanding a congressional smelling committee to ascertain the purposes and extent of such "Trusts." We do not believe that the safety of the nation or the welfare of the public are menaced in any degree by these combinations of manufacturers to promote the best interest of the industries in which they have millions of dollars invested, and which

give employment to so many thousands of persons. The country is always the most prosperous when all its industries are conducted on a basis that yields a fair margin of profit, and permits those engaged in them to pay liberal wages to those who are dependent upon them for a livelihood. There is not the slightest danger that such combinations will create powerful monopolies, for this cannot be accomplished in the face of active competition; even if there were but little competition in a given line of industry, such competition would be increased the moment large profits were in sight. It may be taken for granted that where there is so much capital seeking profitable investment, no combination of men can create a monopoly that is dangerous to the community. On the contrary, when any line of business has become demoralized through any cause, so that there is little or no profit in it, where competition has been so active that employers have been forced to cut down wages to the lowest point possible, it is the part of wisdom for those interested to come together and make such agreements as will be likely to place their

business on a more profitable basis. This is precisely what the "Trusts" in various branches of commerce are seeking to do, and we sincerely hope they may be successful, notwithstanding the opposition of congressional demagogues.

In the jewelry trade there are numerous organizations for various purposes, but none that are intended to regulate production or prices, as is the case with the "Trusts" referred to. Yet these organizations within the trade are accomplishing a vast amount of good in their own way, and it is only to be regretted that their scope cannot be enlarged so as to take measures to prevent over-production, cutting of prices, unbusinesslike competition, and, by wise regulations, correct many of the abuses that have grown up and that render the business less remunerative and less desirable than it should be. The great difficulty in the way of organizing a "Jewelers' Trust" is found in the great number of separate and distinct industries that go to make up the jewelry industry. It would be utterly impossible to unite them all upon a basis of equality, or to formulate regulations that would bear equally upon all. The next best thing, and what we should like to see done, is for each separate branch of the trade to perfect an organization of its own, and prescribe conditions that all could observe with advantage. There is no good reason why, for instance, the makers of watch movements should not have an association among themselves to regulate the methods of doing business, and limiting their output in accordance with a demand that warrants good prices. Case makers might organize in a similar manner and watchmakers also, while the manufacturers of plated ware would certainly find it to their advantage to do so. There are numerous other special lines, all of which form part of the jewelry trade, that might be made far more profitable than they now are and offer better inducements to the employees in them, if there was intelligent combination among those who are responsible for the manner in which they are conducted. For a number of years the competition in the trade has been pushed to a most unhealthy degree, resulting in the introduction of many abuses that ultimately bring heavy losses. Whenever competition is excessive, down go prices, and to meet this reduction the manufacturer is forced to cut down wages and to economize in the cost of production, often at a sacrifice of quality and the jeopardizing of his good name. While neither law nor combination can make a man honest, contact with his associates may convince him that his interest lies in working harmoniously with them and adopting uniform practices that are intended for the betterment of the business in general. Instead of such combinations being monopolistic in their tendencies, they are in the best interests of the community, which is prosperous or otherwise, according to the degree of success attending its individual members. The various organizations within the trade are doing much good, but organized effort can go much further than it now does, and we should be glad to see it pushed to its highest development. We have no fear of any injury being done to the public through such "Trusts," however the opposition to them may be used for political effect.

Another Insurance Revolution.



WE HAVE, from time to time, advised our readers as to what is going on in the field of insurance, for the reason that every dealer is supposed to carry more or less insurance, and so to be personally interested in the subject. There have been various organizations among the insurance companies of late years for the purpose ostensibly of improving their business, but really for the purpose of advancing rates. The longest lived of these organizations was the Tariff Association, the purpose of which was to classify risks and make rates according to the hazards. Hazard, however, played an unimportant part in their classifications compared with other things; if the companies would only agree to maintain a certain rate upon

any class of property, the hazard was a secondary consideration. So the Tariff Association kept advancing rates as fast as they could get the consent of the companies, and finally nearly all the special hazards had rates of their own, regardless of what the experiences of the companies may have been in reference to such risks. Lately, however, it was found that the companies were cheating each other, some of those who had pledged themselves to observe the rules of the association were found to be cutting rates in order to steal business from their competitors. So rampant had this sort of thing become, that on the last of January a number of the more prominent companies withdrew from the combination, and a couple of weeks later the others came together and by vote suspended all their rules and regulations, thus destroying all rate schedules, and leaving the field open to a go-as-you-please competition. All went to work immediately to cancel policies issued at the high tariff rates and to substitute for them new policies at much lower rates, and in the course of a week it is probable that every property owner in the city had been offered the advantage of the reduction. But on the very day of the disruption of the association new efforts were made to revive it, the underwriters thus showing that they do not know themselves what they want, but are conducting their business on a hap-hazard-plan, getting all they can when they can, and taking what they can get when they cannot get more. Their recent proceedings are well calculated to disgust property owners with the whole business, and to lead to the belief that underwriting is conducted with a less degree of intelligence than any other industry among us. At the present writing rates are all in the air, and companies will issue their policies on any terms upon which the owner and the broker can agree.

But during all the trouble among the companies, the broker, or middleman, gets in his work just the same, and contrives to make more profit out of the business than do the stockholders or managers. It is admitted that they control about ninety per cent. of the business in this vicinity, and as the companies bid against each other for it, the broker gets anywhere from twenty-five to fifty per cent. of the premium, a price that no legitimate and honest enterprise can afford to pay for new business. As a consequence, the brokers are getting rich and the companies poor, few of the latter having made a profit in several years. But the insuring public is interested in the brokers' commissions only to the extent of assuming that if the companies would reduce these to a reasonable rate they could afford to reduce charges for insurance accordingly. Property owners are unquestionably willing to pay reasonable rates for insurance, but they do not relish the idea that a lot of middlemen, who have no connection with the business beyond what they can make out of it, should walk off with one-half the premium they are compelled to pay. As the insurance situation is to-day, property owners wanting insurance should send to half a dozen different brokers and set them to cutting each other's throats on the question of rates, and then take a five year policy from the one who bids the lowest and can give policies in trustworthy companies. As rates are now as low as they probably every will be, those interested should lay in a stock of insurance to last a long time.

The Depthing-Tool.



SINCE the quality of a depthing-tool principally depends on the overlapping of the teeth and leaves being the exact quantity required by theory, it is specially important that the tool used for determining the distance between the centers of the movable parts should be of the utmost attainable accuracy. First ascertain that the spindle which serves as an axis for the two halves of the tool does not change position when they have been several times separated and brought together. For if this were to happen, and a runner were uneven, or the hinge not smoothed within, the parallel-

ism of the two pairs of runners would be impaired. The runners must be of equal thickness throughout, and should pass with ease from one head to that opposite. Their points and center holes must be seen to that they are in good order, and, on placing them in the turns, they must be found to be most true and cylindrical. Having restored them to their places with their points together, move the pair lengthwise from one head to the other, examining the points in successive positions to ascertain that they coincide accurately, both when the runners are loose and when clamped. When the adjustment has been carelessly done the runners will be found to bend under pressure, causing the points to be displaced.

Having set two runners side by side and level, describe with them circular arcs on a smooth piece of brass from centers previously marked; first with the points just projecting from the heads, and then projecting more and more. These tests may be made both within and without the tool, so that there will be four tests in all. It is very important in making the last-named trials that the tool be maintained at right angles to the plate on which the circular arcs are traced; this condition can easily be satisfied by a special device, or by merely causing the compass to slide along a set square. It may be added that the series of arcs should be drawn end to end, in order that it may be easier to observe their agreement or difference when examining with the glass.

When this series of tests has been gone through, and the pivots have been examined so as to make sure that there is no burr which bends over while tracing the arcs, it is possible to determine the value of the tool; we know whether it is perfect or not, and what corrections are required. As a rule, there are two points mainly at fault; the holes in the head are not exact continuations the one of the other, so that they need to be broached out afresh and new runners have to be made. A careful and intelligent workman, who is provided with suitable tools, will be able, from the information given in the above, to correct, or at least improve, a defective depthing-tool.



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First Vice-President, JOSEPH B. BOWDEN.....Of J. B. Bowden & Co.
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At the first regular meeting of the Executive Committee held on Friday evening, 3d inst., there were present Vice-President Bowden, and Messrs. Howe, Greason, Jeannot, Houghton, Bardel and Sexton.

Mr. Howe was unanimously chosen Chairman.

Six changes of beneficiaries were granted.

Two applications were referred for investigation.

Thomas L. Kelly, of Philadelphia, proposed by Jacob Muhr, and Joseph W. Weiss, of New York, proposed by Max Freund were accepted in membership.

New Isochronal Clock.



HERE is some doubt as to when the first clock was made, but historically we find mention of the production of a clock in 1232. All of the early clocks subsequent to this show a great inventive skill and wonderful constructive ability; but until the discovery of the isochronal property of the pendulum by Galileo, the mathematical investigation of the pendulum by Huygens, and the adaptation of the pendulum to the regulation of the motion of the clock by Harris, about 200 years ago, nothing like a perfect time-keeping clock was known.

Probably no single machine was ever made in so many forms or

Mr. H. Conant, of Pawtucket, R. I., has devised and patented a clock in which an average of time, as kept by a number of pendulums and escapements of the most perfect construction, is indicated by the main hands and dial. This clock is shown in the annexed engraving. It is a fine piece of mechanism, made by Tiffany & Co.

This clock is provided with four pendulums and four escapements arranged in pairs, as shown in fig. 2. Each pair of scape wheel arbors carry pinions, which engage in the large spur wheels, which are placed loosely on their supporting shafts, and act as intermediates to transmit power from the main train to these several escapements. Fig. 3 shows in detail the arrangement of these wheels. Power is received by the middle wheel, B, and it is transmitted to the wheels on each side of it by means of the little planetary bevel wheel, C, which is fixed with its axis radially to the supporting shaft, and is carried around as the wheel, B, revolves. This arrangement will allow one of the pinions being stopped, or to move at a speed different from the wheel, B, or its mate on the opposite side of B, and is known to mechanics as a compound or differential gearing. In this case it acts to average the motions of the side wheels, A A, into the middle wheel, B, for it will be seen that if another pinion wheel be acted upon by the wheel B, that this pinion would move at

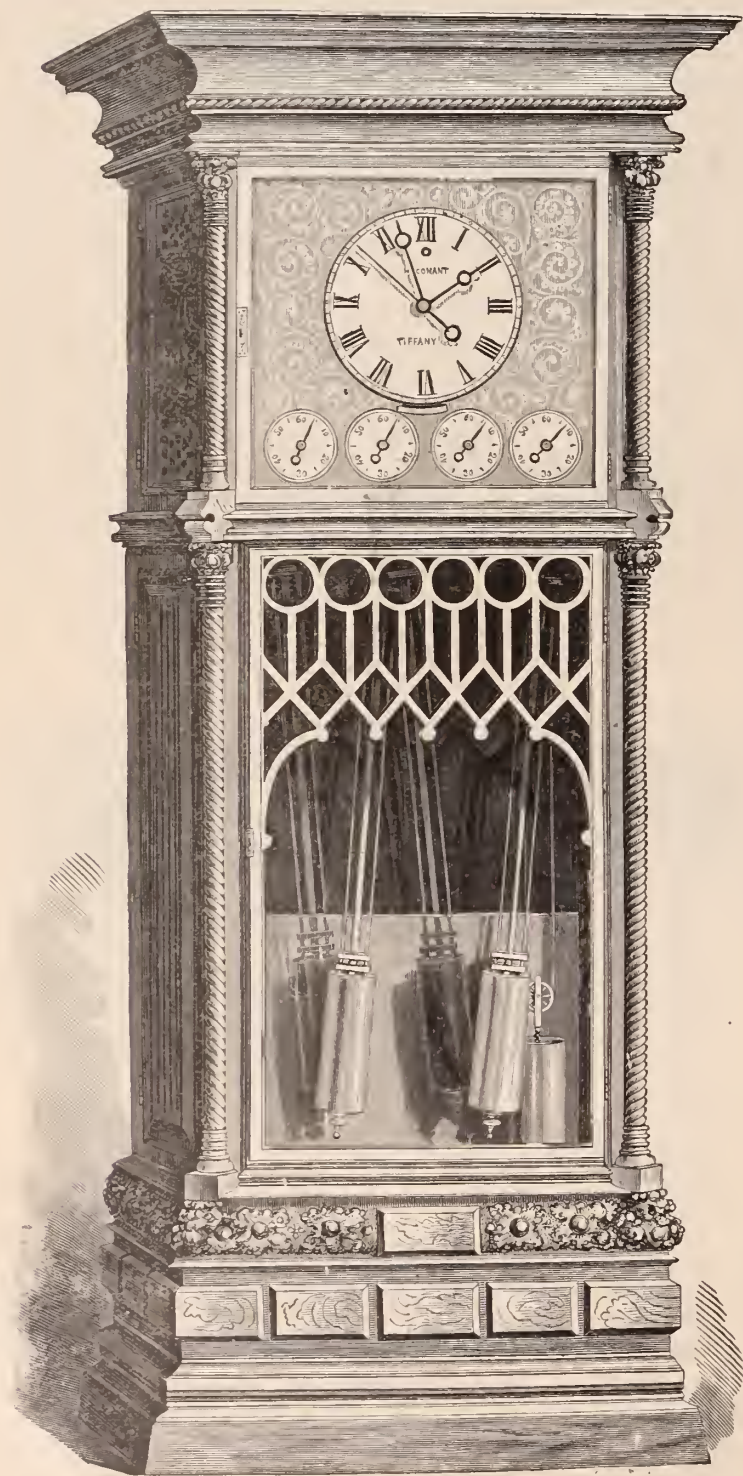


FIG. 1.—CONANT'S ISOCHRONAL CLOCK.

in so great numbers, nor at so small cost, considering the great number of parts, the accuracy with which the parts are made, and the care with which they are assembled. Of course, the great majority of clocks only approximate accuracy. A few are reasonably accurate, but even these have errors which must be compensated.

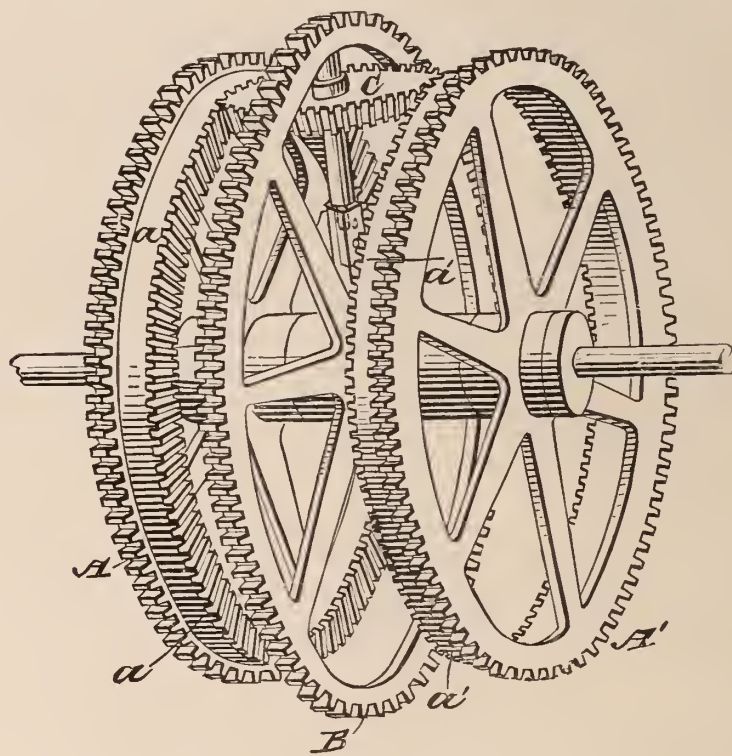


FIG. 3.—THE AVERAGING WHEELS.

the average speed of the pinions driven by A A, which is the half of the speed of each added together. Then calling the assemblage of wheels in fig. 3 an intermediate mechanism, it will simplify the description to say that the second pair of pendulums and their escape wheels receive their impulse by a duplicate mechanism, and that these two pairs of pendulums are impelled by a third mechanism whose central wheel is impelled by the pinion on the shaft of the sweep seconds shaft on the main dial, said pinion being a part of the main train, which is made correspondingly heavier and stronger, and is driven by a heavier weight than ordinary, inasmuch as the four escapements require four times the weight to give them proportionate effect. Thus it will be seen that the seconds hand of the main dial moves at an average of that of the four pendulums, and responds to the ticks of each.

To show fully the action of the clock, we will suppose that it is all ready to run, and the seconds hands, both of the pendulums and the main dial are all set at 60, or zero, and the pendulums are at rest. We will now start pendulum No. 1. The pendulum ticks seconds, and the second hand of that escapement will revolve once in exactly

one minute. But the seconds hand of the main dial, although it responds to the ticks of that pendulum, only moves forward one-fourth of a second, and will not complete a revolution until the first has made four revolutions. This shows that the value of the ticks of each pendulum is but a quarter of a second to the main seconds hand. Now, in corroboration, starting another pendulum will increase the speed of the main hand by another equal factor, and three pendulums moving will give three-fourths speed, while the four

intended to cut off any sympathy caused by the motion of the air. This clock is much easier of regulation than the ordinary clock, for the reason that it is not necessary that each pendulum should keep correct time, but that it should have a steady rate, and if it is too fast, it is corrected by another going correspondingly too slow; and the inventor believes that pendulums will have a steadier rate when thus associated than when isolated, quality and other circumstances being equal.

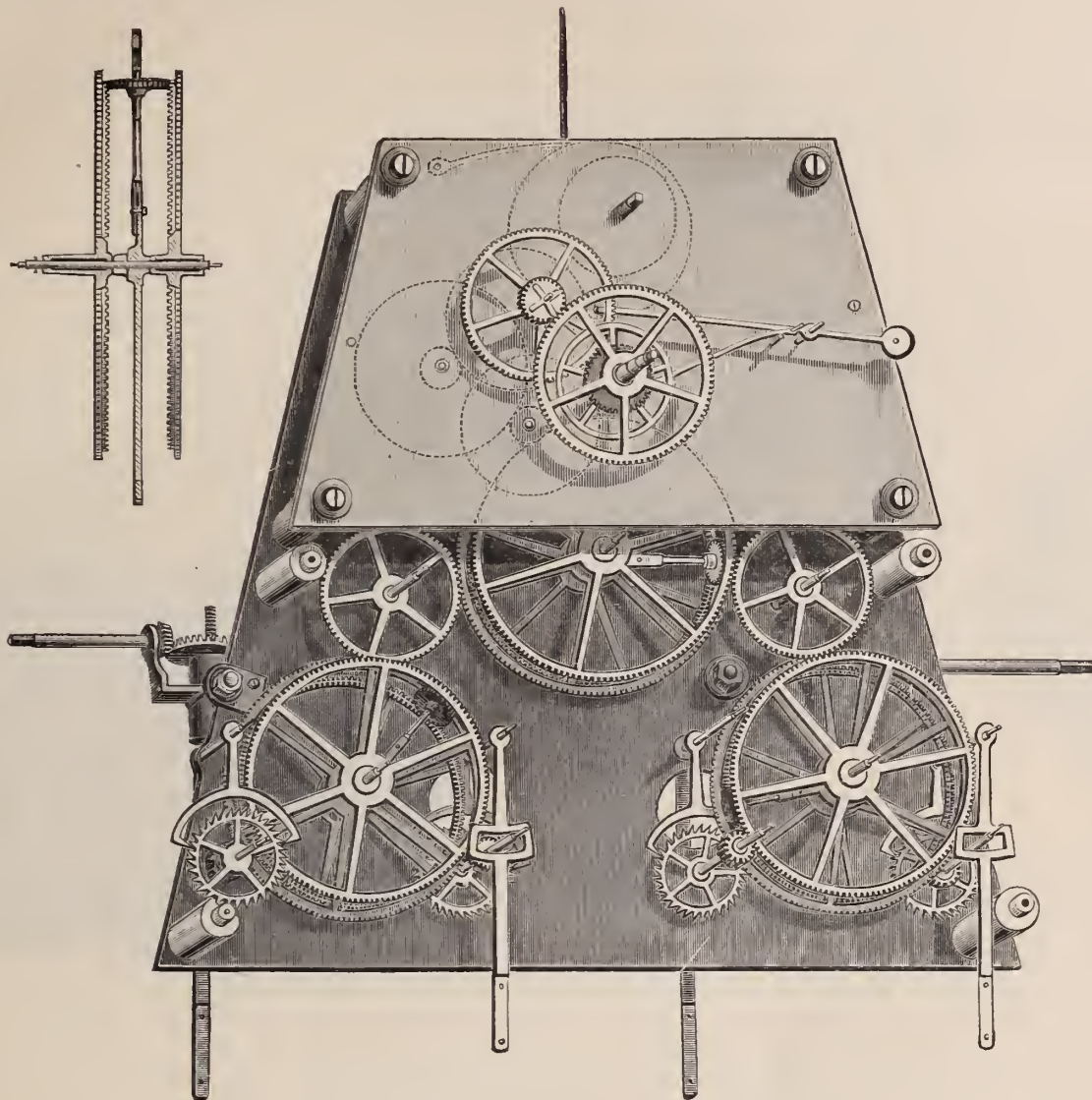


FIG. 2.—TIME-AVERAGING MECHANISM OF CONANT'S CLOCK.

will impart a speed equal to one-fourth of each added to together, consequently an average of the speed of all.

To give room, the clock is made rather wider in its case than ordinary, and two pendulums are in front and two are in back. A plate of thick glass is put between the front and back pendulums, and is

It will be readily understood from this description that these instruments can be made with two, four, eight, or even sixteen pendulums, or marine escapements, as desired for accuracy. This one here described was made for the purpose of exemplifying the invention and testing the workings of different compensating pendulums.

Erroneous Teaching.



HAVING SHOWN in my last article, says I. Herrmann, that the question of impulse angle lies within a much smaller compass than is represented by some authors treating on horology; neither is there any occasion for "ringing the changes on terms" about real lift, semi-lift, total real lift, etc., which tend more to confusions, into which the authors themselves got drawn at times, than any real benefit.

In a horizontal escapement the geometrical conditions are as simple as that of the dead-beat clock escapement; the angle of impulse, when once the pallet or escape wheel is completed, is a fixed quantity.

The distance of the point where the tooth drops on to the cylinder or the concentric of the dead beat measured from the lip or the impulse plane, is the only variable quantity.

It is this quantity added to the impulse angle of cylinder or pendulum that constitutes the whole movement of either, between the exit of the same tooth from the lips of the cylinder, or teeth from the terminal edges of impulse planes of the pallets; hence, as far as a repairer of watches is concerned, the immediate question is not one of measure of lift, for that is a matter of construction and is a fixed quantity in a given wheel, but of where the tooth drops on to the cylinder, for that is the condition on which the measure of balance motion from drop to drop depends, or that determines the angular

position of the points where the impulse commences and terminates in relation to the line of centers, and for these measures I cannot see any need of any other terms than impulse and apparent impulse.

In Geneva or foreign horizontal watches there are three dots, as referred to be Saunier. The two furthest apart are supposed to indicate the points where the impulse terminates, and the middle one is as a guide for those who do not know how to put a watch in beat.

These dots, as I have ascertained by experiments (and I may give it as the result of various tests), are either determined by guess or by a method that is no better. That this is so is admitted by Saunier and others, for the former tells his readers that if the (these marks) are not right, they are to correct them. Considering the material at their command, this seems like telling a wayfarer in a strange land that if he finds the directing posts wrong he is to set them right.

Lathes and Lathe Work.

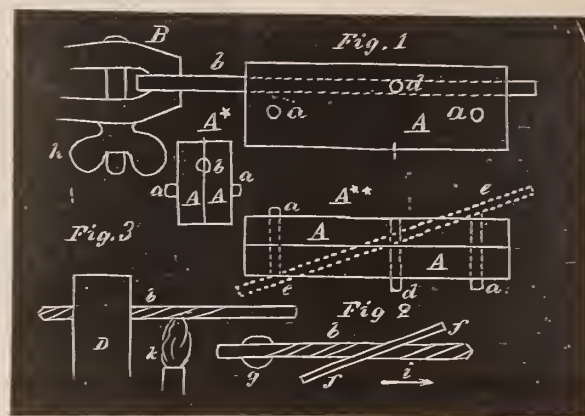
BY THE MODEL WATCHMAKER.



IT FREQUENTLY happens that workmen desire a twist drill, and are situated so they cannot buy what they want. A drill of this kind is not as difficult to make as one would at sight imagine. To make them in the regular way requires a good deal of special machinery. But the manner here described is open to every person of anything like mechanical ability. All the tools that are needed are very few and simple. First is a piece of Stub's wire of the proper size, or, if this is not convenient, a

larger piece turned down to the right size. Then 2 blocks of hard wood, about $\frac{1}{2}$ inch thick and 2 inches long by 1 inch wide. These blocks are put side by side and joined by 2 steady pins $a a$, as shown in fig. 1 and diagram A^* , where A represents the blocks and $a a$ the steady pins. Near the top edge of the blocks A is a groove b cut half in each to receive the vise for a drill. The idea is that we place a steel wire of the right size in the groove b to form our drill, and then by means of a properly shaped saw cut the spiral groove of the drill. I suppose every person almost knows what is meant by the term "pitch of a screw." But for the benefit of those who do not, would beg to say it is the measure of the advance of the thread per inch; that is, a screw which has 12 threads to the inch has a pitch of $\frac{1}{12}$ of an inch. Now, the pitch of all twist drills is very rapid, but as there is a double thread, so to speak, it does not look as rapid as it really is. To study such drills it is best to take one about $\frac{1}{16}$ of an inch in diameter, and make a sort of analysis of the principles. Take a twist drill of the make suggested and lay it on your bench, then take a needle or piece of wire of a size to match the crease of the twist. When you lay the drill on the bench, let one end rest on a small crumb of beeswax as shown at g , fig. 2. Press the drill down to the bench so it will lie flat, but the wax will keep it steady from rolling, then lay the needle or bit of wire so it rests in the groove of the twists as shown in fig. 2, where b represents the drill and $f f$ the needle. Now, if the needle is balanced on b , the direction of the needle will show the angle at which the saw should cut to produce a drill of this size. This line is the same as $e e$, diagram A^{**} . In producing such a drill a kerf is sawn into the two blocks $A A$, as shown at the dotted lines $e e$, and deep enough in to reach the groove b . The wire of which the drill is to be made is inserted into the groove after the end is squared off, and held with a pin vise as shown at B , fig. 1. At diagram A^{**} is shown a top view of the

device seen in the direction of the arrow c ; at d is shown the end of a wire pin extending into the groove b ; against this the end of the wire b rests which is to form the twist drill. As soon as the saw in the kerf e cuts deep enough to form one of the grooves in the drill, the pin d is drawn back and the wire b advanced as fast as groove or channel in the drill is cut deep enough. It will be seen that the vise b will advance in the direction of the arrow i , just in proportion to the obliquity of the line $f f$, fig. 2. After a groove has been cut in b as long as is desired for the drill, b is withdrawn from the hole in A and the pin d inserted again, and the wire b again pushed against it; but this time the vise B is turned half way round, that is, instead of the nut of the pin vise being down as shown at h , fig. 1, it stands on the top as we commence to cut the groove. We repeat the instructions given for cutting the first groove and the twist part of our drill is complete, and the drill has only to be pointed and hardened to be ready for use. The saw for cutting the channel in b has to be round on the edge, a form difficult to produce by ordinary methods, still quite easy if gone about in the right way. Three or four thicknesses of saws will make a great variety of sizes. A variety of files called join ing files will cut the groove, or a wire of the right size cut in a screw plate and hardened will make a very efficient saw. The best way to use such a wire saw is to fasten it to a piece of printer's brass rule. The edge of the rule should be grooved to hold the screw saw steady. The ends of the wire can be tacked to the brass rule with soft solder. But the most efficient tool or cutter for this purpose is the joint file. If a file is a trifle too thin the



groove can be deepened out with a small round file, or perhaps it would be better to say widened out, for the depth is regulated by the round-edged joint file. A little practice will enable one to file a drill almost as perfect as if it was milled out with a special cutter. It is not necessary for the twist part to extend back, in the majority of cases, more than $\frac{1}{2}$ an inch; a little of the twist at the point is all that is needed for most work. In tempering a drill it should be heated evenly and plunged endwise into water to prevent springing. In case a drill springs in tempering, it can be straightened by drilling a hole into a block of wood as shown in fig. 3, where a lamp is applied and the drill bent to correct any spring which came from hardening. To reduce the temper after hardening, it is better to brighten with an emery buff and then run down the temper to a brown straw color. It is well to start with the groove too slight, and then remove the drill from the block A , and use a simple filing block to finish in. The trouble lies in all such jobs in starting right. It is difficult to file up to the extreme end, and for this reason it is well to cut off about $\frac{1}{8}$ of an inch at the end, as shown at the dotted line j , fig. 2. In bending a drill, as shown in fig. 3, to straighten it, the heating should be done; after it is run down in tempering, re-brighten it with the emery buff and apply the lamp as shown at fig. 3, where D represents a block of wood about $\frac{1}{2}$ an inch thick, $b b$ the drill and k the lamp. The bending should be done by heating the corner side up to a dark straw, when a well directed effort applied to the outer end causes the drill to spring enough to straighten it without reducing the temper too low. It is not necessary to blue the drill; if heated to a dark straw it will yield enough to do the

business. To sharpen a twist drill is something very few people can do properly, and it is something more difficult to describe. Undoubtedly an emery wheel is the best tool to use, but an emery wheel requires such a fearful speed to get a good result; a common foot lathe is not rapid enough without using an emery wheel at least 4 inches in diameter. In absence of an emery wheel at high speed, a Washeta oilstone slip is to be preferred. The proper angle is about 80° at the point; some say 60° , but this seems a little too acute for most purposes. The face or end of the drill must only slant a little, just enough to make the drill bite—take hold. The test of good action with a twist drill is that in all metals except cast iron it should yield a continuous spiral chip.

Gilding and Gold Plating.

Continued from page 55, February, 1888.



THE SPECIAL methods of cleaning depend both upon the nature of the impurities upon the surface and of the metal beneath. All greasy articles, of whatever metal they are composed, are always dipped into the potash solution, and then usually rinsed thoroughly in water. Articles composed of lead, tin, Britannia metal or pewter, are dipped in the caustic potash, and, with or without rinsing, transferred at once to the depositing solution. Those of zinc are sometimes treated similarly; and at other times are, after swilling, dipped in dilute sulphuric acid, washed again and transferred to the plating fluid.

For cleaning iron articles, a cold mixture of about twenty measures of water and one of sulphuric acid is frequently used; but a better liquid is composed of one gallon of water and one pound of sulphuric acid, with one or two ounces of zinc dissolved in it; to this is added one-half pound of nitric acid. This mixture leaves the iron quite bright, whereas dilute sulphuric acid alone leaves it black or of a different appearance at the edges. For glassy patches upon cast iron (which usually consist of silicate of iron), hydrofluoric acid is used; it is kept in a bottle of gutta percha, closed with a bung of India rubber; it must not be allowed to come into contact with glass vessels, nor must the mouth of the bottle be left open. The fumes from it are extremely dangerous to inhale. Articles of iron which have been cleaned in acids and the adhering acids washed away with water, may be protected from rusting by continued immersion in lime water, a solution of washing soda or in water containing any caustic alkali until required.

Articles of pure silver are best dipped, in a heated state, in dilute boiling sulphuric acid, after having been immersed in the alkali and rinsed; or they may be dipped cold in strong and pure nitric acid, and then in distilled water. New anodes of silver are often greasy, and have a film of oxide of iron upon them; they should be scoured with caustic alkali or be heated to redness before being placed in the plating solution.

For articles of copper, brass or German silver, a series of liquids is used: first, strong nitric acid; second, "dipping liquid," consisting of sixty-four parts of water, sixty-four of sulphuric acid, thirty-two of nitric acid and one of hydrochloric acid; and third, "spent" liquid, that is, either nitric acid or dipping liquid which has become weak. Such articles are often partly cleaned by heating them to

dull redness and then plunging them into dilute sulphuric acid. Those having solder upon them are not heated in this manner; articles of cast bronze are also not heated in this way, because they would be liable to crack. They are then soaked in old aquafortis until, after rinsing, they look uniformly metallic; they may then be dipped in strong aquafortis for a few seconds and rinsed. The straw-colored aquafortis acts the best; the white acts too feebly and the red too strongly. It is necessary to have a large bulk of the acid in order that it may not become too warm by the action.

To dip Gilding Metal Bright.—Immerse it in weak aquafortis until there is a black scale formed; then dip it in "strong pickle" for a few minutes. (N. B.—"Strong pickle" is exhausted aquafortis; "weak pickle" is the same, diluted with the washings.) Then dip it quickly into strong aquafortis, and then into several waters in succession. There are various mixtures which may be employed for imparting a bright luster by dipping; the following is one of them: One measure of nearly exhausted aquafortis, two of water and six of hydrochloric acid; the articles of copper, brass or German silver should be immersed in it a few minutes, or until, after washing the black mud that entirely covers them, they look bright; they are then cleaned and dipped again. To obtain a dead luster, the articles of copper or its alloys are dipped into a cold mixture of one volume of oil of vitriol mixed with two volumes of yellow aquafortis, and a little common salt then added; the articles must remain some time in the bath, and then be quickly dipped into the liquid for producing a bright luster and immediately rinsed. Articles composed of German silver are more difficult to impart a proper appearance to by the process of dipping than those of copper or brass.

Old aquafortis is revived, to a certain extent, by the addition of oil of vitriol and common salt; the sulphuric acid decomposes the nitrate of copper in it and also the common salt, and sets free nitric and hydrochloric acids; and crystals of sulphate of copper form at the bottom of the liquid. All the nitric acid may be utilized in this manner.

Small articles are either strung upon wires of the same or similar metal, or they are put into a stoneware basket and then dipped. Hooks and strong rods of copper, brass, etc., sufficiently well known to electro-platers, are necessary for suspending articles upon for the purpose of dipping them into the various liquids. It is best that these hooks should be of the same material as the articles, because they are then less liable to cause a stain. Very small articles are placed in a basket or perforated bowl of stoneware or gutta percha, or a tray of platinum wire gauze to be dipped. Cleaned ones of brass are immersed in a solution of argol to keep them from oxidizing. There should also be a series of vessels containing water for effectually rinsing the articles. The pans for containing the pickling, dipping, stripping and quicking liquids should be of the very best quality of salt glazed stoneware.

Sometimes, in order to assist in cleaning the articles, they are suspended for a short time in a suitable acid or cyanide liquid in contact with the positive pole of a battery; this dissolves the surface and loosens the impurities, unless they are very foul. In every case they should be well rinsed with water to remove the adhering acids, etc., before dipping them into the "quicking" solution or immersing them in the depositing vat. All objects which are to have a definite amount of metal deposited upon them, are weighted and their weight noted after they have been cleaned.

"Stopping Off" to Prevent Deposition.—Many articles which are to receive deposits require to have portions of their surface "stopped off" to prevent the deposit spreading over those parts; for instance, in taking a copy of one side of a bronze medallion, the opposite side must be coated with some kind of varnish, wax or fat, to prevent deposition; or in gilding the inside of a cream jug which has been silvered on the outside, varnish must be applied all round the outer side of the edge for the same reasons. For gilding and other hot solutions, copal varnish is generally used; but for cold liquids and

common work, an ordinary varnish, such as engravers use for similar purposes, will do very well. In the absence of other substances, a solution of sealing wax dissolved in naphtha may be employed.

"Quicking" the Surfaces of Articles.—"Quicking" means coating the surfaces with a film of mercury, for the purpose of causing the deposited silver, etc., to adhere firmly; the mercury acts, by offering a perfectly clean surface to receive the deposit, and, by dissolving to a minute extent both the surface of the article and that of the deposit, enables them to mutually interpenetrate and alloy with each other.

Solutions of nitrate or of cyanide of mercury, are used for preparing the surfaces of copper, brass and German silver for receiving adhesive deposits of silver. The nitrate solution is prepared by adding one ounce of mercury to sufficient nitric acid, diluted with three times its bulk of distilled water to dissolve it; no more mercury must be added than the liquid will take up; when completely dissolved, add about one gallon of water. To prepare the cyanide solution, dissolve one ounce of mercury as just stated, dilute it with water and add a solution of cyanide of potassium to it, exactly as long as a precipitate is produced; filter it, add a small quantity of water to the precipitate in the filter, and, when thoroughly drained, take out the precipitate and add to it, with stirring, a strong solution of cyanide of potassium until it is all dissolved; then add a little more cyanide solution, and finally dilute with water until the whole measures one gallon. Another solution is composed of one part of pernitrate of mercury and two parts of nitric or sulphuric acid, dissolved in 1,000 parts of water; or, take nitric acid of specific gravity 1.383, add to it half its weight of mercury and heat the liquid to 100° C., until yellow fumes are no longer evolved; the solution should not be crystallized; dissolve one part by weight of this liquid in 1,000 parts of water, with which two parts of sulphuric acid have been previously mixed. Or, dissolve two ounces of mercury in two ounces of cold nitric acid, and then add three gallons of water; this forms a good solution.

Almost any salt of mercury ("red precipitate," for instance,) may be dissolved in a solution of cyanide of potassium to form a "quicking" liquid. Such a liquid is frequently made by adding the cyanide to the nitrate, and not troubling to wash the precipitate. The objection to a solution of nitrate of mercury alone is, that as the quicking liquid cannot be readily washed completely away from hollow articles, the traces remaining in crevices cause the silver to strip from those parts. Oxide of mercury, dissolved in a solution of cyanide of potassium, is often used as a "quicking solution," but it is not as good for copper articles as pernitrate of mercury, containing a little hydrochloric acid. The solution, when prepared, is kept in a large stoneware vessel, with a pan of "dipping liquid" and two others containing water near it, and each placed near the scratch-brush lathe and depositing vats in the silvering room.

"Quicking solution" should only contain sufficient dissolved mercury to make a copper surface immersed in it a few seconds become white; if the copper becomes black, the silver deposited upon it will not adhere; it also shows that the solution of mercury is either exhausted or not in a proper condition. Too much "quick" causes the silver to "strip," and usually too little can hardly be put on, but the amount varies in different cases.

Articles which are to receive a thick coating of gold or silver, require a stronger mercurial solution than those which are to receive a thin deposit, and they should be perfectly white and bright like silver on coming out of the mercurial bath; if the "quickenings" has succeeded they will have a uniform appearance. The solution will last a long time; when it gets nearly exhausted, it is liable to turn the articles which are dipped into it of a dark color; it is then better to prepare a fresh liquid than to revive the old.

(To be continued.)

The Diamond Trade of Amsterdam.



ABOUT 20,000 karats of rough diamonds reach the hands of the Amsterdam manufacturers each week. When finished these vary in price from \$4 to \$55 per karat, while some stones command very much higher prices. The capital invested in this trade is not all Dutch, for a very large proportion of the diamonds manipulated in Amsterdam belong to London and Paris houses. Berlin, Frankfurt, St. Petersburg, Moscow, Rome, Naples, Barcelona and Madrid, all are markets for diamonds prepared in Amsterdam.

Besides Antwerp, the diamond industry is carried on extensively nowhere else. The trade is usually conducted on the cash system, credit being generally short. The aggregate paid in wages to diamond workers in Amsterdam is about £600,000 per annum, and it is estimated that from 7,000 to 8,000 persons are employed in the industry, and in the business of buying and selling the rough and polished stones. The wages of the men engaged in the various operations of cleaning, cutting and polishing are decreasing, because of the constant increase in the number of skilled workmen and the never-ceasing accession of apprentices.

The declared export of diamonds from Amsterdam to the United States in 1886, amounted to £275,708, but this by no means represents the total export, but those the invoices of which were presented to the consul to be certified. A large quantity is sent to Paris and London to be dispatched to America, and many diamonds are also taken on the person.—*London Times*.

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For further information, Application Blanks for Membership, By-Laws, etc., Address
P. O. Box 3277. 170 Broadway, New York.

The regular monthly meeting of the Executive Committee was held at the Alliance office on the 10th inst. There were present Vice-Presidents Sloan, Hayes, Untermeyer, J. B. Bowden, Chairman, Messrs. Alford, Lewis and Secretary Champenois. The following were admitted to membership:

E. H. Saxton, 403 Washington street, Boston, Mass.; Walter Sperling, corner Marine and State streets, Seneca, Kansas; Geo. W. Cooley, Sidney, N. Y.; Chapman & Gale, 152 Main street, Norfolk, Va.

A special meeting of the Executive Committee was held at the Alliance office on the 26th inst. There were present Vice-Presidents Sloan and Hays, Messrs. Lewis, White, Kroeber, Parks and Secretary Champenois.

The following firms were admitted to membership:

D. W. S. Crown & Co., 180 Washington street, Boston, Mass.; August Loch, 149 Federal street, Allegheny, Pa.; J. W. Cudworth, Main street, Oxford, N. Y.; J. W. Webb, 610 Main street, Dallas, Texas; Smith, Lesquereux & Co., 55 Stockbridge street, Springfield, Mass.; Zimmer & Halliwell, 264 Main street, Poughkeepsie, N. Y.

The British Merchandise Marks Act.

THE NEW CUSTOMS REGULATIONS AND PROHIBITION ON IMPORTATION.

1. Goods prohibited to be imported as hereinbefore recited,* having applied to them forged trade marks, false trade descriptions, or marks, names, or descriptions, otherwise illegal, which, upon examination, are detected by the officers of Customs, are to be detained by them without the requirement of previous information.

2. In giving information with a view to detention, an informant must fulfil the following conditions, viz.: (i.) He must give to the Collector or Superintendent, or the Chief Officer of Customs of the

FIGURE 1.



Shield for Foreign Gold Case.
(Actual size.)

FIGURE 2.



Shield for Foreign Silver Case.
(Actual size.)

Port (or Sub-Port) of expected importation, notice in writing, stating the number of packages expected, as far as he is able to state the same; the description of the goods by marks or other particulars sufficient for their identification; the name or other sufficient indication of the importing ship; the manner in which the goods infringe the Act; the expected day of the arrival of the ship. (ii.) He

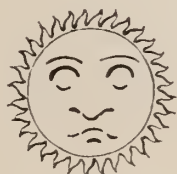
deposit of £10 per cent. on the value of the goods, as fixed by the officer from the quantities or value shown by the entry; and, also, subsequently a bond to be completed within four days in double the value of the goods with two approved sureties. The *ad valorem* deposit will be returned upon completion of the bond, and will not be required if, as an alternative where time permits, the informant prefers to give a like bond before examination, upon estimated value of the goods declared to by him under statutory declaration. If the security is not duly given as above required, there will be no further detention of the goods.

5. In the above regulations the words "officer of Customs" mean an officer acting under general or special direction of the Commissioners, and the words "value of the goods" mean value irrespective of duty.

6. The "notice" and "bond" required as above shall be in the forms contained in the schedule to regulations, or in such other forms as the Commissioners may from time to time order and direct.

7. The security taken under these regulations will be given up at the times following—that is to say: Where given before examination, and if no detention, forthwith; where given on detention—if the forfeiture is completed, either by lapse of time or ultimate condemnation by a Court of Justice, then on such completion of forfeiture; if the forfeiture is not completed, then if the goods are released by the Commissioners, and no action of suit has been commenced against them, or any of their officers in respect of the deten-

FIGURE III.—Particular mark for each Hall.



LONDON.
(Phœbus.)



BIRMINGHAM.
(Equilateral Triangle.)



CHESTER.
(Acorn and Two Leaves.)



SHEFFIELD.
(Crossed Arrows.)



EDINBURGH.
(St. Andrew's Cross.)



GLASGOW.
(Bishop's Mitre.)



DUBLIN.
(Shamrock.)

FIGURE IV.—Carat Marks for Gold.

22, and .917
20, and .833

18, and .75.
15, and .625.

12, and .5.
9, and .375.

must deposit with the Collector or other officer, as aforesaid, a sum sufficient, in the opinion of that officer, to cover any additional expense which may be incurred in the examination required by reason of his notice.

3. If, upon arrival and examination of the goods, the officer of Customs is satisfied that there is no ground for their detention, they will be delivered. If he is not so satisfied, he will decide either to detain the goods, as in a case of detention upon ordinary examination, or to require security from the informant for reimbursing the Commissioners or their officers all expenses and damages incurred in respect of the detention made on his information, and of any proceedings consequent thereon.

4. The security thus required must be an immediate *ad valorem*

* See Section 16, Merchandise Marks Act.

tion, then at the expiration of three months from the time of detention; or, if the goods are released for failure of proceedings taken for the forfeiture and condemnation thereof upon information under Section 207 of the Customs Consolidation Act, 1876, and no action or suit has been commenced against the Commissioners, or any of their officers, in respect of the detention, then at the expiration of three months from the trial of such information; if within such periods as aforesaid any such action or suit as aforesaid has been commenced, then upon the ultimate conclusion of such action or suit, and the fulfilment of the purpose for which the security was given.

8. These regulations apply to trans-shipment and transit goods as well as to goods landed to be warehoused or for home consumption.

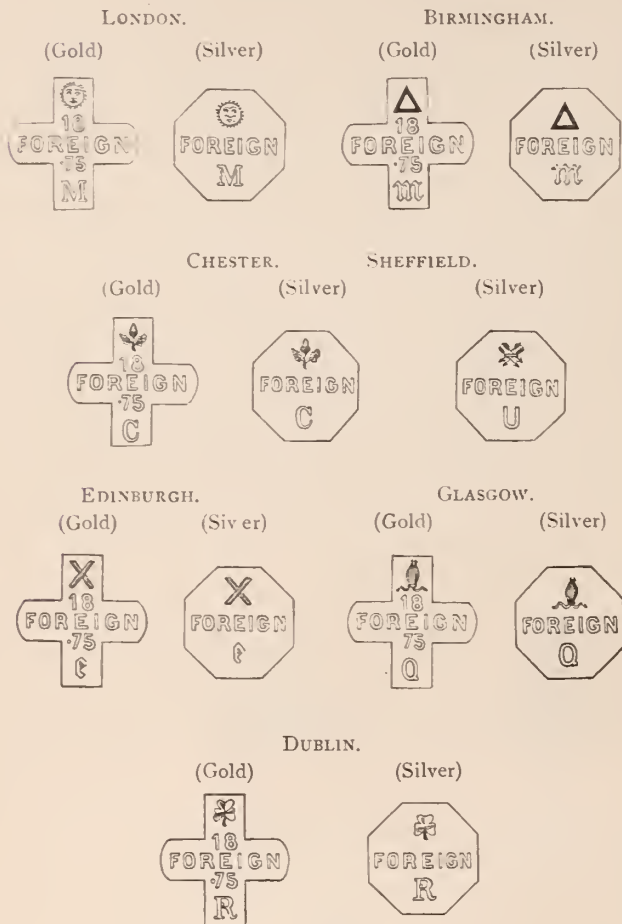
9. The 1st day of January, 1888, is, by these "regulations," fixed as the day from which section 2 of the Revenue Act, 1883, shall be

repealed, subject to the terms of the recited Act; and these regulations will take effect from the date of such repeal.

Commissioners of Her Majesty's Customs. { CHARLES DU CANE,
H. MURRAY,
HORACE SEYMOUR.

Custom House, London, December 1.

FIGURE V.—REPRESENTATION OF MARKS.
(About three times the actual size.)



The annual variable date-letter is to be inserted in position as shown above. The proper gold carat value is also to be inserted in position as shown above.

FORM OF DECLARATION AND THE NEW HALL MARKS FOR FOREIGN-MADE WATCH CASES.

From the *London Gazette*, December 9, 1887.

WHEREAS by the Merchandise Marks Act, 1887, 50 and 51 Vic. c. 28, it is, amongst other things, provided that—

- (1.) Every person who, after the date fixed by Order in Council, sends or brings a watch case, whether imported or not, to any assay office in the United Kingdom for the purpose of being assayed, stamped or marked, shall make a declaration, declaring in what country or place the case was made. If it appears by such declaration that the watch case was made in some country or place out of the United Kingdom, the assay office shall place on the case such a mark (differing from the mark placed by the office on a watch case made in the United Kingdom) and in such a mode as may be from time to time directed by Order in Council.
- (2.) The declaration may be made before an officer of an assay office appointed in that behalf by the office (which officer is hereby authorized to administer such a declaration) or before a Justice of the Peace or a Commissioner having power to administer oaths in the Supreme Court of Judicature in England or Ireland or in the Court of Session in Scotland, and shall be in such form as may be from time to time directed by Order in Council,
- (3.) Every person who makes a false declaration for the purposes of

this section shall be liable on conviction or indictment to the penalties of perjury, and, on summary conviction, to a fine not exceeding twenty pounds for each offence.

Now, therefore, Her Majesty, by and with the advice of Her Privy Council, and in exercise of the powers vested in Her by the above recited provisions of the said Act, is pleased to order and declare, and doth hereby order and declare, that where it appears by such declaration that such watch cases have been made in some country or place out of the United Kingdom, then the following Authorities, that is to say:—

The Wardens and Commonalty of the Mystery of Goldsmiths of the City of London;

The Guardians of the Standard of Wrought Plate, Birmingham;

The Company of Goldsmiths of the City of Chester;

The Guardians of the Standard of Wrought Plate, Sheffield;

The Incorporation of Goldsmiths of the City of Edinburgh;

The Goldsmiths Company of the City of Glasgow;

The Fraternity or Company of Goldsmiths of the City of Dublin, shall respectively cause to be placed on such watch cases the marks more particularly described and delineated in Schedule II., hereunto annexed, and no other mark or marks, and such marks are hereby authorized accordingly.

And it is hereby further ordered and declared that the declaration to be made shall be in the form set forth in Schedule I., hereunto annexed.

This Order shall come into operation on the first day of January, one thousand eight hundred and eighty-eight.

C. L. PEEL.

SCHEDULE I. FORM OF DECLARATION.

I, (a) do hereby declare that the [watch case] or [watch cases] [brought] or [sent] by me this day to the Assay Office at in number and in a parcel marked [was] [were] made in (b) Declared at this day of 18 Before me (c) Officer of the aforesaid Assay Office appointed in that behalf or, Justice of the Peace for or, Commissioner having power to administer oaths in the Supreme Court of Judicature in England. [Supreme Court of Judicature in Ireland.] [Court of Session in Scotland].

(a) Here insert name and address of declarant.
(b) Signature of declarant.
(c) Signature and title of person before whom the declaration is made.

SCHEDULE II.

On a foreign gold case:—

Within a shield of the form of a Cross, and of the size shown in Figure I. of the Appendix hereto, the word "Foreign," over which a Hall Mark particular to each office shown in Figure III. and the carat value of the gold, and under which the decimal equivalent of the carat value of the gold together with the variable annual date-letter.

On a foreign silver case:—

Within a shield of the form of a regular octagon and of the size shown in Figure II. of the Appendix hereto, the word "Foreign," over which a Hall Mark particular to each office shown in Figure III. and under which the variable annual date-letter.

The particular Hall Mark above referred to for each of the seven assay offices at which foreign cases may be stamped is shown in Figure V. of the Appendix hereto.

Prize Essay on the Balance Spring.

[By MORITZ IMMISCH.]

Continued from page 37, January, 1887.

FIXED THE outer end of a spring of five turns to a movable stud or lever (*A*, fig. 4.) turning on pivots at some distance from the spring. One of the balance arms had a long notch in it to receive a stud in place of the collet, to which the inner end of the spring was fixed, and which could be easily moved to and fixed at any distance from the center. In setting the balance in motion the lever, of course, moved to and fro, turning on its pivots always in the same direction as the balance moved, no matter whether the spring was fixed as in the drawing or the reverse way. I found the lever *A* to move very differently according to the relative positions of the end—sometimes equally to and fro, sometimes much more when the spring expanded than when it contracted. These differences were about the same in each coil, provided the relative positions of the ends were the same, only they were more conspicuous as the spring got shorter. The greatest deviation of the lever I found when the ends were fixed about half way, making $4\frac{1}{2}$, $3\frac{1}{2}$ and $2\frac{1}{2}$ turns.

In tapering the outer coil of a similar spring toward the end the movement of the lever became much less, because here the point of the greatest strain was confined to the immediate neighborhood of the fixing point. It follows that the greatest deviation of the lever

from its quiescent position denotes that the greatest strain is as far from the end as it possibly can be. These imperfections, if I may so call them, are made use of to procure isochronism in flat springs.

If the strain is too near the end at the commencement of the vibrations, there is not sufficient room for it to advance further; the cohesive power of the particles of the extremities of the spring will be overstrained when the vibrations get larger, causing them, of course, to be quicker.

On the other hand, when the strain at the beginning of the vibration is farther from the end, it has more scope to travel forward; the momentum of the balance will be more powerful (comparatively speaking) in long vibrations, the point of rest before the return of the balance will be prolonged and, consequently, the long vibrations will be slower. There is, therefore, a certain relative position in every flat spring where the long vibrations are slowest and another where they are quickest, but whether the difference between the two is sufficient to meet the exigencies of the case is another question, and depends on the conditions considered at length above. That difference, as we have seen in this experiment, decreases with the length of the spring, and it is found by practice that it *increases* with the proportion in which the *distances of the coils from each other are tapering toward the center*. In a very long spring where these distances are equal it is very small. If, as is usually the case, index and curb pins are used to bring the watch to time, this, of course, alters the isochronal properties of the spring. Curb pins can therefore be used to procure isochronism if timing screws are used for rating the watch, but this can only be done within comparatively narrow limits, as when the curb pins are too far removed from the stud the unemployed end will slightly move in a contrary direction to that of the spring, and as this movement is caused by the strain of the employed part, it will, in its turn, affect the vibrations. The differences arising out of such compound motion have no definable limits and must therefore be avoided.

In any alteration of the spring effected for the purpose of making the long vibrations slower, the weight of the balance should be altered.

It is best to operate on a pair of small screws close to the rim of the balance; the changing of the diameter sometimes entirely destroys the beneficial effect which the lengthening or shortening of the spring would otherwise have had.

A greater or less tapering of the distances toward the center will vary the relative positions of those points, where the difference between long and short arcs is greatest, and these relative positions must be found out in each case.

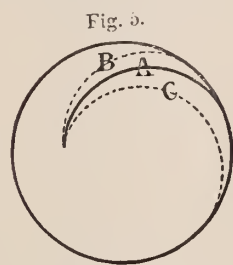
A flat spring should have about eleven turns. If shorter, it must be harder in proportion, on account of the greater strain. The distance of the coils farthest from the center should be about twice greater than the innermost ones.

Formerly, springs were often made tapering to procure isochronism. This mode was first employed by Berthoud, and there is no doubt that isochronism must be obtained by that means if the taper is properly proportioned; but the difficulty in the way of making these springs has brought them into disuse.

In Breguet springs isochronism is obtained by bending the outer end, and in cylindrical or helical springs by bending both ends into curves toward the center.

By what has been said in the case of the flat spring, it will be extremely easy to understand the nature of the change effected by this manipulation. If we compare the inner coils of a flat spring with the outer and try to bend them by opposite central forces, with a pair of tweezers, for instance, we find that the outer coils give way much easier, which proves that the smaller have a greater degree of rigidity; by bending the outer turns toward the center; therefore, we impart more rigidity to the end, causing it to oppose a greater resistance to a bending force, so that when the vibrations are small the greatest strain is farther from the center, and the same argument I advanced in the case of a flat spring remains here in full force. It stands to reason that if the curve is too abrupt, the length to which this greater rigidity is imparted is shorter; if the curve is more gentle, beginning farther from the end, the greatest strain will be farther from, and will be enabled more gradually to advance toward the fixing point.

If, therefore, the watch loses in long vibrations and the curve of the spring should have the form *A*, fig. 5, it will have to be changed to a form approaching *B*; and if it gains in long vibrations the curve must be begun farther from the end, approaching the form *C*.



It is evident that a helical spring having both ends turned in, offers a larger scope for operation than the Breguet spring. Both, however, have the important advantage in common, that they emancipate the balance from the side pressure of the pivots in their holes.

The outer end being fixed within the circle of the spring and the curve itself expanding, the free end of the curve, which is also the commencement of the circular coil, is enabled to recede from and to advance toward the center, according to the direction in which the balance is moved, while when the extreme end of the last circular coil is fixed the expansion and contraction is one-sided, causing a side pressure in their holes; we can, therefore, with a Breguet or cylindrical spring, obtain a greater arc of vibration with a smaller amount of motive force.

In the case of spherical springs, a greater rigidity is given to the ends, not only by the smaller diameter of the outer coils, but also by the different inclinations which the flat sides of the spring have to the plane of the motion. It is only the center coil, the sides of which are exactly rectangular to the plane of motion, and will, therefore, be affected most.

The isochronal adjustment of this spring consists in lengthening and shortening it, and bringing the watch to time by altering the balance in the manner described above.

This spring stands in the same predicament as the tapering flat

spring, and as no particular advantage attaches to this form which would compensate for the greater difficulty in making it, it is very seldom resorted to, and belongs to the class of fancy forms, if I may use this expression.

We see that in all these different forms the principle of adjustment of isochronism is the same, although the manipulations differ.

The motion of a spring may be imagined as a struggle between the body of a spring and the extremities. Although when the spring is inflected *all* the coils bend; it is, in point of fact, the resistance of the extremities which checks the force of the momentum of the balance. It stands to reason that in order to have the greatest strain at the proper distance from the center, the absolute elastic force of the body of the spring must be exactly even throughout its whole length or (in the case of flat springs) exactly proportionate to the length, because if this proportion is not even and there should be a weak place in any part of it, the greatest strain would be *there* and not where it ought to be, and any change effected in the extremities will be more or less ineffective. It is therefore of the utmost importance that the degree of hardness should be absolutely uniform throughout the spring. Care should also be taken that the body of the spring should not get bent, as the re-bending it to its former position causes an unevenness of the texture of the metal. The unevenness caused by such a proceeding will be greater when the material is soft.

(To be Continued.)

Free Hand and Mechanical Drawing.

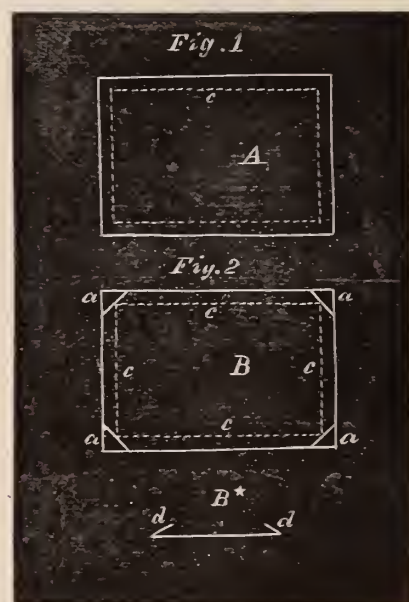
BY EXPERT.



THE LIST of colors given in November issue of this journal in the hands of a skilful man would produce very fine work, but as the pupil advances he will find other colors desirable; but the worst danger is, he will be induced to read various treatises on painting in such books as are circulated by color men who desire to sell this, induces them to advertise many colors which are not desirable or even trustworthy. I remember hearing an artist make a statement to this effect (if not the exact words), that if nine-tenths of the pictures painted were done with colors which would absolutely fade and perish, so no trace or vestige of them remained in one year, the world would be all the better off.

Now, while this may all be true in an abstract sense, still, especially with amateur work, a brother or a sister having even an inferior effort of a dear relative, would very much hate to lose it even though not of high merit. The color list given, as cited above, is not in all respects what it should be, but in most instances reliable. Two colors it contains are not perfectly stable, to wit: Prussian blue and gamboge; neither is indigo as stable as could be desired, yet our best artists use them. There are a great number of aniline lakes now which are eminently treacherous. It is well on this account to reject all reds of the lake hue except the madder lakes. These reds are rose madder and madder carmine. But the cochineal carmines and lakes are all treacherous. So much for the reds. When it comes to blues, ultramarine, made from a peculiar stone, *lapis lazuli*, is *par excellence* the color; but it is very expensive, and an artificial ultramarine takes its place and is sold under a dozen different names, as French blue, French ultramarine etc., but one soon becomes accustomed to its peculiar hue, and then there is no mistaking it. Its permanence is near perfect, but, as a

water color, it washes badly. Consequently we use cobalt for most sky effects, leaving ultramarine for touching up, etc. In yellows we have only a few that are perfectly reliable. Among these are aureolin lemon yellow, not chrome lemon yellow, but a color made from stronticem. Cadmium yellows of various degrees of depth are also permanent. I have been led to speak particularly of these colors to warn the pupil against any temptation to indulge in experiments that cannot result in anything but disaster. In all landscape efforts the sky is always washed in first, then the distance, next the middle distance and lastly the foreground. After washing in a sky it is allowed to dry perfectly, then with a very soft sponge the colors are washed with plenty of water so as to remove a great portion of them. This, of course, necessitates putting on washes of much greater depth and strength of tone than our judgment would dictate as necessary. But the result is a peculiar softness that is very desirable. This can not well be done with the solid sketch blocks recommended in former article, as the excessive amount of water used would separate the several sheets combined in the block. When using such blocks, only use color as dark as you desire or take up the excessive color with the brush, dipping and rinsing the brush in your water tumbler. Such paper blocks can be washed even by taking the precaution to varnish the edges of the block with shellac dissolved in alcohol, to prevent the water from getting between the edges of the several sheets and separating them. When it comes to



water color drawings of any size a drawing board is necessary. A plain, flat pine board, about 18x24 inches, is large enough for all early efforts. It requires a good bit of skill and practice to stretch a sheet of drawing paper on a board nicely. But practice and patience will do it, however. If you do not get your paper on satisfactorily the first time, don't tear it off, but wash in a sky and work up some sort of a rough sketch. But don't fail to profit by your experience in putting your paper properly on the board next time. It is well to commence with paper nearly as large as the board, as sheets of this size is more easily managed than smaller ones. To make the mode of stretching drawing paper better understood, we will refer to figs. 1 and 2. Fig. 1 shows the plain drawing board A, and the dotted lines c indicate where the edge of the paper comes. Fig. 2 shows the drawing paper cut to about the size of the board. The paper should be cut nice and true, then a margin line c ruled with a pencil 1 inch from the edge. After the lines c are ruled the corners are cut off, as shown at a a a a. We next lay the paper B on the board A, and with a soft sponge and water, hardly blood warm, thoroughly wet the paper B on both sides. Wring out the sponge and take up the excessive moisture, finishing with a soft, dry linen towel, patting the paper until all the water the towel will absorb is taken up. The paper is next laid face down on the drawing board and the edges turned over all around to the pencil line c; the paper now, if seen

edgewise on the dotted line *b*, would appear as shown at diagram *B**. Some strong glue should be already prepared for smearing on the edges *d*, diagram *B**. Glue for this purpose should be of the consistency of molasses while hot. A bristle brush, known as a sash tool, is the best for this purpose. The whole process must be done rapidly or the glue will set and the paper get too dry. The paper is now turned over on the board and the edges *d d d d* pressed firmly down. The best way is to have two drawing boards, and after *B* is applied by the edges to one board, the other is laid flat upon it and weights placed on top to hold the paper pressed down while it dries. After a couple of hours the upper board can be removed, and the paper will be found perfectly flat and drawn as tight as the head of a drum. Paper prepared in this way works admirably for washing, and, indeed, for that matter, for any purpose. Several small drawings can be made on such a sheet, only taking care in washing to turn the board so no water from the drawing you are washing will run over the other sketches. After a drawing is complete, it can be cut from the board by running a knife around the edges where it is folded over, leaving the folded part *d* to be wet and removed from the board at some subsequent time. In mounting drawings made in this way, the usual plan is to cut to the edge of the drawing proper, leaving no margin. The extreme edge of the drawing is now touched with gum water or mucilage, and then placed on a piece of white card board enough larger than the drawing to show margin all around. To cover the joining many artists rule a line all around, and then about $\frac{1}{8}$ or $\frac{1}{4}$ of an inch away rule again a line. This line should be made with a ruling pen and not heavy enough to be conspicuous. It is well to learn to mount your pictures, even in first efforts, as a clean workman, like mounting, is a strong indication of the proper technical training. Brushes should never be left dirty and full of color; always clean your pencils when quitting work.



There is not a jewelry jobber in town to-day. They are all in New York, where they went to attend the annual meeting of the National Association, and for the past week nothing has been heard in jewelry circles except speculation as to the probable action of the session. The Philadelphia wholesale men are not at all alarmed at the alleged prospective price-breaking threatened by Dueber, the western manufacturer. His proposed scheme of selling direct to the retail trade, ignoring the jobber, has been tried by local manufacturers with a conspicuous absence of success. That the Dueber plan will be generally followed is not feared in this city, and the Association is expected to take action looking to the prevention of any such steps being taken by irresponsible parties on their own account. Many of the local jobbers and manufacturers left this city on Monday night for the metropolis, and the remainder took an early train yesterday morning, therefore the usual stagnation of the trade which occurs at this time of the year is more than particularly noticeable.

The only actual news of importance to the trade in this locality is the consolidation of the firm of Booz & Co. and Mr. Alfred Humbert, under the title of the National Watch Case Company, which still continues to be the principal topic of discussion, although it was known in the trade some time ago. The new company is having a fine establishment fitted up at 715, 717 and 719 Arch street, where it will occupy the whole third floor of the large building. From 150 to 175 men will be employed here after the firm gets well under way, and it is the intention of the gentlemen engaged in the enterprise to add any number that may be found requisite from time to time. Messrs. Booz and Humbert are giving their personal atten-

tion to the fitting up of the rooms, and no detail will be spared to make them in every way first-class and well adapted to the uses for which they are intended. The office in the front portion of the apartment will be handsomely finished in cherry, and the company will put out a force of salesmen to be added to as the business increases. Both houses will abandon their present locations on 8th and Chestnut streets, and concentrate all their energies in the operations of the National Company. They both report business as fair at present, and expect to have the new place in working order about February 22 or not later than March 1.

Mr. Charles Hollinshead, of the firm of Hollinshead Bros., the well-known Chestnut street jewelers, has just returned from a trip up through this State, and says that business is really much better than he expected to find it. He had little difficulty in securing orders, and leaves for a similar trip through New Jersey in a few days.

Mr. McCarty, of McCarty & Hurlburt, declares that the duller months of the year, January and February, witnessed a decided tendency to improvement this year over the past few years. The salesmen of this firm are sending in more orders than could reasonably be expected for the season and the prospects for a lively spring trade are excellent.

The ever popular Mr. D. F. Conover, of D. F. Conover & Co., tells THE CIRCULAR correspondent that there is no news, and that no matter how bright a news gatherer may be he can't pick up much among the local trade at this season of the year. Mr. Conover tells good stories, however, and speaks hopefully of the future. General dullness, with "better than usual for February," is the average information given out by most of the houses. W. H. Sheaffer & Co. are jubilant over the outlook for the future, and T. B. Hagstoz & Co. do not anticipate any lasting trouble from the strikes, although they say that the Reading's trouble with the miners has told somewhat on the retail trade, both locally and up in the coal regions. In Port Richmond the retail jewelers report to the wholesalers that the railroad strike has a slight tendency to reduce their sales, but they are of the opinion that this will be only temporary at the worst.

Mr. Louis A. Scherr, of L. A. Scherr & Co., is in California with his wife, and when last heard from they were both enjoying the trip. Mr. Scherr, by the way, is a member of the select branch of City Councils, and he is missed from his seat among the City Fathers.

Simons Bro. & Co., Hirst, Moore & White and Mr. Peter L. Krider, all join in the general statement that news is hard to obtain and gossip among the trade not busy. They have hardly finished "taking stock," but they are fairly busy filling orders.

H. Muhr's Sons have been considerably annoyed during the past few days by a rumor that the firm intended to move from their handsome and commodious quarters at Seventh and Chestnut streets. They have no intention of changing their base, and have not given any consideration to such an idea.

A pleasing contrast to the general dullness that seems to predominate, is presented by the reports of Atkinson Bros., of the operations of the Keystone Watch Company. According to the firm's statements their works at Lancaster are running to their fullest capacity and they find it difficult, if not impossible, to fill all their orders. They expect shortly to push up their products to 350 movements per day, and to employ twice as many hands as at present.

Among the retailers there is little of importance to note. Bailey, Banks & Biddle did a big business in diamonds during the holiday season, and have hardly finished the last touches upon this extensive traffic.

J. E. Caldwell & Co. experience no difficulty in keeping up their end, and agree that hopefulness characterizes the outlook. So all along the line, even down to the small sellers. There is no chance for "snide" jewelry in this city. The people want their ornaments good or they do not want them at all.

The optical trade is not dull, if the sayings of the dealers are any criterion to go by. "People must see at all seasons of the year," says Mr. George Mayer, the Chestnut street optician, "and while

they may make their old glasses do for a while when times are hard, they usually find it no economy to ruin their eyesight to keep their pockets intact." This testimony is corroborated by Mr. Michael Zineman, of M. Zineman & Bro., who have recently removed to their fine store on Ninth street above Walnut. This firm a short time ago abandoned the jewelry business to devote themselves to the spectacle and eye-glass trade, and last year they were obliged to call in all their salesmen early in December as they were unable to comply with the orders on hand. From present indications this year promises to be equally busy.

Mr. Williams, of the Philadelphia Optical Company, is also sanguine about the prospects of the near future, but is inclined to think that the business is a little affected by the existing labor troubles.

The most important move in this trade is the change of hands of the Morgan & Headley Optical Company, which formerly operated the spectacle and eye-glass factory at Eleventh and Mifflin streets. The establishment has undergone a complete reorganization, and will henceforth be handled by the National Optical Company. The new concern has applied for a charter, and until its incorporation the projectors prefer that their names shall be withheld, as they intend to give the trade a genuine surprise of an agreeable nature. The organization is on a substantial basis, with plenty of means to back it, and a liberal policy will be pursued in its management. New processes are to be introduced, and the styles of goods to be turned out are to be of the best. Mr. C. B. Bishop, who has been the superintendent of the works for some years past, will, in all probability, continue in charge. He reports business as fairly good so far this year. The property of the Morgan & Headley Co. was purchased by a syndicate of bondholders of the company's creditors at a trustees' sale on January 4, and since then the reorganization has been in progress. At present the factory employs about 125 hands.

"Music boxes are selling well in all the large cities of the West." So says Mr. Henry Gautschi, of the well-known Chestnut street firm devoted to this harmonious industry.

Collections are good and orders are being constantly received from Chicago, St. Louis, Cincinnati, St. Paul and other points in that section of the country.

PENN.

Philadelphia, February 15, 1888.



ATTLEBORO.

The jewelry interest in this section is far from being active. I thought when I wrote my last letter to THE CIRCULAR that by the first of the month everything would be going along smoothly and business would be good. I formed this impression from what the different manufacturers told me, but I find that although most of the shops are running there seems to be very little attempt to force the trade. Now they tell me that nothing better can be looked for before the middle of May or the first of June, and even this may be too early, and in the meantime they hope to keep running on short hours.

This outlook is as disheartening to the employees as to the proprietors, as, of course, no work means an empty pocketbook, and among the first ones to really feel the slack-up are the merchants of the town. Most of the men make good wages, but in the majority of cases the money is spent about as fast as it is earned, although many of the bright and pretty homes which add so much to the beauty of our town are owned by men who earned their money at the bench.

The firm of Marsh & Bigney have been shut down for several days this month. This firm have had a very prosperous season, but

like the most of the jewelers find the general jobbing trade very dull.

Watson & Newell, who manufacture different kinds of jewelry but make a specialty of collar buttons, are thus far running on full time. They have got some good men on the road, which probably accounts for their success. Mr. Watson, the senior member of this firm, came to this town many years ago with hardly a dollar in his pocket, but by close application to business both while working at the bench and afterwards as a manufacturer he has amassed a considerable fortune, and is now considered among the wealthiest men in town. He is a good citizen and a practical business man, ever on the right side. He takes an interest in town matters, the affairs of which he believes in running on business principles.

Cummings & Wexel are another button firm who are doing a very good business.

W. & S. Blackington do a big business in the manufacture of chains. The greater part of their trade is through the New York office.

Mr. Arthur Lincoln, so long connected with the firm of C. A. Robinson & Co., is now in the office of Mr. F. S. Draper. Both of these firms have been doing a large business but now are easing off a little.

W. H. Wilmarth & Co. are fairly busy, having found a good market for their goods during the past season, but like the rest are looking for a period of rest. Mr. Sweeney, the bookkeeper, told me the prospects for the near future were far from being encouraging, but they hoped the orders would begin to come in before long.

S. W. Gould & Co. is another live firm. The employees of this shop gave one of their number a very handsome gold headed cane last month, the occasion being the 70th birthday of the recipient.

ATTLEBORO FALLS.

In this little village which, as in the rest of the Attleboros, also depends on the prosperity of the jewelry for its support, the manufacturers are hoping for good times before long, but feel that it will not be likely to come for some time yet.

R. F. Simmons & Co. are the firm which probably do the most business here, but just now they have the same general complaint to make that there is no trade. Mr. Simmons told me that they should probably keep running, but the orders were light and salesmen were meeting with very little success on the road.

NORTH ATTLEBORO.

North Attleboro since my last letter has had the honor of entertaining the New England Jewelers' Association, and with accustomed promptness to respond to all such occasions as this, has performed her welcome duty faithfully. The date of this reception was January 30. A special train from Providence arrived in the early evening bringing the members from that city, and upon their arrival they at once made their way to the Wamsutta House. Supper was announced at 8 o'clock, and then it was found that although mine host Davenport had received word that there would only be about 80 guests, whereas there were 154. The worthy landlord always rises superior to an emergency of this kind, and having accommodated 117 at the first table commenced preparations for the remainder at a second table. Of course, the supper was good. When the inner man had been fully satisfied, an adjournment was made to Emmet Hall across the street where dancing was indulged in till the small hours of the evening. It was purely a social occasion and was thoroughly enjoyed by all.

The same general complaint of dull prospects is to be found in the shops of this part of the town. Salesmen are meeting with ill success on the road, although very few shops are really shut down.

E. I. Franklin & Co. are keeping along and hope soon for better times.

Bugbee & Niles are fast getting the affairs of the old firm straightened out, but find the prospects in the near future far from encouraging.

The silver works of F. M. Whiting & Co. are doing fully as well as their neighbors. Stern & Young find their trade quite dull, but are keeping their hands running on a few late orders.

Everybody complains of dull times but say it is expected, and therefore that it finds them, in a measure, prepared.

PLAINVILLE.

What influences the trade in one section spreads over the whole, and no shop is being rushed in this little village.

The recent death of Mr. Joseph T. Bacon, whose obituary appears in this issue, has cast a gloom over the community, the loss of such a man being universally felt.

MENDON.

Melting the Trade Dollars.



RECENTLY the last "melt" of the 3,495,533 trade dollars which have been received at the United States Assay Office, in Wall street, since the act of Congress authorizing their purchase went into effect, was completed, and the limpid silver was poured into the moulds and transformed into silver bricks, 1,100 to 1,200 ounces in weight. A "melt" of silver at the Assay Office means 5,000 ounces. Therefore, in order to make way with the whole number of this three and a half millions of trade dollars, about seven hundred "melts" were necessary.

A reporter chanced to be present and stood near the crucible when these last representatives of a dead currency slowly lost their individuality, and became a shapeless, glittering mass. Their career was not one of honor. They never were treated with the respect accorded to the ancient "dollar of our daddies." They had their origin in falsehood and deceit—in the untruthful declaration that they were intended for a use which those who pushed the measure through Congress creating them never meant for them.

It was a ruse to get the bill passed when the originators of the scheme said that they were to be employed "in the Chinese and Japanese trade." So, unlike any other coin of the Republic, they were stamped with their weight in grains (420), and their degree of fineness (900), and labeled "trade dollar." A small portion only was sent among the Orientals. The bulk of the issue was forced into circulation in the States and by questionable means. Finding that they were flooding the country instead of forming the medium of trade between the Pacific States and the Celestials, Congress unwisely, as the result proved, withdrew from them the semblance of their legal tender quality by repealing that portion of the act calling them into being, which made them compulsorily receivable in sums of five dollars or less. Then no longer a legitimate medium of currency, they degenerated into an object of barter and traffic with unscrupulous brokers and money-shavers, and many a hard-working man and woman, by whom they had been unwillingly accepted as wages, was compelled to submit to a cruel discount of five to fifteen per cent. before they could be converted into the necessities of life. Although in the scales the trade dollar was equal to eleven dimes in weight, and a ten-cent piece had to be added to two fifty-cent pieces or to four quarters to make them balance with a trade dollar, yet these big "sinkers" were a drug in the market, and so continued until, after a long struggle, Congress was induced by the brokers and money-shavers, into whose possession they had come, to pass the act by which they were "called back."

What is denominated an "inclosure" in one of the vaults of the Assay Office, contains over 400 cubic feet of trade dollars which have passed through the crucible and are now stacked up in the shape of silver bricks. The government has paid about \$3,400,000 for them, but they are useless, Superintendent Andrew Mason says, and unless made into standard dollars, of which there is now such a surplus that the Treasury Department cannot find storage room for them, a loss of about 25 per cent, would be sustained in disposing of the metal to manufacturers and artisans. The furnishing of gold and silver bars for manufacturing purposes is, Superintendent Mason says, a growing business at the Assay Office. During the past year these bars, to the value of \$10,000,000, have been sold for use in arts and manu-

factures, an increase of \$2,000,000 over any previous year.

When the last "melt" of the trade dollars had been poured into the moulds and made into brick, the reporter observed that two small quantities, perhaps of a grain or two each, were put into little receptacles and sent to the assaying room. "These," explained Assistant Assayer J. T. Wilder, "are the samples for assaying. Two are taken from each 'melt.' They are each assayed by different persons and their work must tally. If it does not, the work is repeated. If the two assays still fail to agree, the whole melt is re-melted and fresh samples taken. Then the process is gone through with again.

"The greatest care is taken," said Mr. Wilder, "to guard against inaccuracies. The assaying is done by the Gay Lussac method. The exact amount of metal is weighed and dissolved in nitric acid. Then enough chlorine is added to precipitate precisely a drachm of pure silver. The solution is then shaken for three minutes in a shaking machine (run by steam), after which it is allowed to settle. More salt water is added, every atom of which is taken account of, and if any silver remains in solution it shows a slight cloudiness. The operation is repeated until no cloudiness appears, showing that no silver remains in solution; that it has all been precipitated. Then a calculation is made as to the exact fineness of the samples of silver in the trade dollar, which is corrected by silver proofs. When the fineness is thoroughly ascertained, it is stamped upon the bar or brick which has been formed by the melted dollars, together with the value, weight, melt number and number of the bar. Then the bar or brick is sent to the 'inclosure' before mentioned, where the other 'trade dollar' bricks are kept under a combination safe lock. The combination of this, as well as of the other safe locks in the building, is known only to Superintendent Mason and one other trusted official."

The antiquated building used as the Assay Office was formerly the Sub-Treasury. It has been occupied for its present purposes since the year 1854, and the work and business done there have long since outgrown it. The old tenement shakes perceptibly when a heavily loaded truck passes along the street in front of it, interfering with the ascertaining of weights upon the delicate little scales used by Assistant Assayer Wilder, upon which he is able to discover the specific gravity of an object almost infinitesimal, an eye-winker, for instance. He often calculates for visiting statesmen the exact weight of their signatures, minus the gravity of the paper upon which they are written. The sum, Mr. Wilder remarked, often represented the weight of the respective statesmen's political influence after they had been registered among the "has beens." The reporter's visit to the gold room revealed many things curious and interesting. Here were bags of scrap gold of all grades sent in by jewelers and workers in gold and silver, waiting to have the fineness of their contents tested in furnaces heated up to over 1,000°. Gold of all the civilized countries was here, sent from London, Paris, Vienna, Antwerp and other European cities. Much of it was said to come from Holland and Germany. The Bank of Amsterdam is a large consigner. One deep pan, ready for the crucible, contained five hundred English sovereigns, most of them bright and new. In another were about one hundred and seventy-five Spanish doubloons, while in a third were French and Belgian twenty-franc pieces, and in a fourth were the twenty-mark coins of Germany. Domestic gold comes in bars, grains and lumps, and in jewelry and the like.

After this gold has been melted, refined and assayed, it is moulded into bars or bricks of various sizes, of value running from \$110 to \$10,000, and properly stamped. Bars worth \$500 to \$700 or less, are called at the Assay Office "chicken feed." The stamping upon the sides of one of them, just come, gave the melt number 145; bar number, 12,561; the weight 20.78 ounces; the value, \$428.49; while on the top, as a verification, was the Assay Office stamp, with the eagle (or "goose," as it is called there) and the fineness, fine 997½. This "chicken feed" varies in weight from about five up to thirty-five ounces. The larger sizes run from twelve to forty pounds in weight. Many of them are stamped \$10,000 and upward in value,

Boxes of newly-stamped bricks, containing \$50,000 to \$100,000 each, stood on cars ready to be trundled to the vaults. On one car was over \$1,500,000. With the stamp of the Assay Office upon them, these bars or bricks are worth in commerce the exact value at which they are stamped, and where gold must be used, are preferred in heavy transactions to any other form of currency. The vaults of the Assay Office contain in this form of gold alone, moulded there, over \$88,000,000. Over \$28,000,000 of this has been received there during the past three months. Such a large amount of treasure deserves better accommodations.

Among the other curiosities of the gold room are the two alleged bars of gold which old Captain Richardson some months ago got from a couple of supposed Californians for \$4,000. They proved to be pure copper without even a veneering of gold. If the old captain had been as well acquainted with the precious metals as he professed to be, he would have discovered the deceit by the color, while by "hefting" them attentively he would have found them not half so heavy as they should be; the specific gravity of copper being but 8.93, while that of gold is 19.3. Captain Richardson never came back after his "gold bars."

While the reporter was at the Assay Office, the interesting process of separating gold and silver which had been melted together was under way. The "melt" was first granulated by being cast into water. Then the silver is dissolved out by being put into sulphuric acid and boiled in huge iron kettles. It is often necessary to repeat the boiling five to ten times before a satisfactory result is reached. In this operation the gold is not dissolved, but the silver dissolves leaving the gold. The manner in which gold and silver are separated from base metals, called "cupellation," was also in progress. Just a drachm in weight of the metal with a small particle of lead is placed in a "cupel," which is a little circular receptacle made of bone, the shape of an ordinary wooden "checker," but a very little larger, and scooped out so as to contain the metal to be cupelled. The cupels, thirty or forty at a time, are placed in a furnace heated by gas up to 1,500°. The action of the heat and air then oxidizes, as it is called, the baser metals, and they are absorbed by the porous cupel and adhere to the bone, while the gold and silver remain.

Many of the officers and employees of the Assay Office are old men, and gray locks and silvery beards are in the majority. Some have been there forty years. Superintendent Mason has passed through seven national administrations and is now serving in his eighth. He entered the employ of the government as a melter and refiner, afterward became an assistant assayer, from which position he was promoted to the superintendency. Assayer Herbert G. Torrey has also long been an officer, and an efficient one. Superintendent Mason was asked how his subordinates, who are constantly handling such large quantities of precious metals, were responsible to him. "Solely by their honesty," was Mr. Mason's reply. "The Superintendent of the vaults is responsible for his men. But for all the rest I have given bonds, and all I have to rely upon is my belief that they are men of thorough integrity."—*N. Y. Tribune.*



PITTSBURGH, PA.

To a person who has not visited Pittsburgh in the past ten years, it would be a great surprise to visit the Pittsburgh of to-day. Not only has there been erected many fine business blocks and its mercantile business greatly increased, but those dark, smoky days that made Pittsburgh so objectionable to a stranger, have disappeared

since the discovery and introduction of natural gas. It has not only proved a blessing to Pittsburgh, but a benefit to the people throughout the land, for by the use of this natural gas in their manufactures, the products are put upon the market at about one-half the cost of what it was when manufactured by soft coal.

The retail jeweler of Pittsburgh to-day can display his gems by sunlight, where before it was gaslight throughout the day. It may be a surprise to some, but nevertheless it is a fact that the demand for novelties, rich, elegant goods in jewelry and pottery, is as great in this city as any city west of New York.

In looking at the stock of Mr. J. C. Grogan, corner of 5th avenue and Market street, you will see as large a collection and as well selected stock of gems as you will find in almost any store in this country. His 26 years' experience in this business, first with H. Richardson & Co., then Mr. L. McIntosh and Grogan & Merz, has placed him in a position which few men gain as a judge of gems. In January last he sold two gems, one diamond weighing 3½ karats and another 3 karats, which figured well up in the thousands; these two stones are to form part of a 15-stone diamond necklace, to be owned and worn by a Pittsburgh lady. This largest stone was known in the trade as "The Star of Bethlehem." Mr. J. S. Crawford is Mr. Grogan's assistant and is highly spoken of by the trade.

Wattles & Sheafer, No. 54 Fifth avenue, is a leading house in the jewelry business. They have a beautiful store and carry a stock of over one hundred thousand dollars. This house has been very successful, as they commenced business 20 years ago with but \$4,000. Mr. Warren Wattles and Mr. James Sheafer comprise this firm and are both practical men. They have in stock one of the most beautiful blue diamonds that can be shown, weighing less than 3 karats, and valued at two thousand five hundred dollars. They have a fine stock of bronzes, statuary, royal Worcester, crown Derby, Dolton, cameo glass, Sevres and Dresden ware, and report the largest December trade they ever had.

Mr. W. W. Wattles, 30 and 32 Fifth avenue, has a very handsome store; the first floors devoted to the sale of diamonds, watches, jewelry and silverware, the second floor to statuary, pottery, cut glass and novelties in imported goods, and the third floor to clocks, bronzes and fancy brass goods. Mr. Wattles has been in the business in Pittsburgh for the last 35 years, and is looked upon as being one of the most reliable men in the trade. He is assisted by his two sons, Mr. J. Harvey Wattles and Mr. Charles W. Wattles. Mr. J. Harvey Wattles has full charge of the silver and fancy goods department, goes to Europe every year and imports direct some of the choicest and most expensive pieces in bronze and pottery. They carry an elegant line of royal Worcester, crown Derby, Dresden, Dolton, cameo and cut glassware, and a variety of Mexican onyx and brass goods.

E. P. Roberts & Sons, 22 Fifth avenue and 442 Market street, composed of Mr. Steele F. Roberts, Mr. Chas. W. Roberts and Mr. John M. Roberts, Jr. Mr. Roberts commenced the jewelry business here on 5th avenue in 1847, and claims to be the oldest jewelry house in Pittsburgh. They have two handsome stores and carry a beautiful line of goods, and by their courteous manner and close attention to business they are fast increasing their trade. I was pleased to learn while in Pittsburgh that this firm has just rented more space, and after May 1, 1888, will receive their friends and patrons at No. 440 and 442 Market street, and from 16 to 22 Fifth avenue. This will give them by far the largest jewelry store in the city of Pittsburgh. They are to put in new glass fronts and new fixtures throughout. They report their business for 1887 far ahead of 1886.

James R. Reid & Bro., 439 Market street, have been in the business here for a number of years and do their share of the trade. They sell a Swiss watch with their own name on for a fine watch, and carry a good stock of watches, diamonds, jewelry, silver, pottery and clocks. Mr. Jas. R. Reid is Inspector of State Penitentiary for Western Pennsylvania, appointed by the Governor.

Hardy & Hayes, 533 Smithfield street, composed of Mr. J. Alex.

Hardy and Mr. Harry B. Hayes. These two young men left Mr. W. W. Wattles about a year ago and commenced for themselves February 22, 1887. They had been in the business over ten years with Mr. Wattles, and this move has been a good one on their part as they report a business far ahead of their expectations for the first year. They are soon to remodel their store, put in new cases and fixtures. They are selling a watch with their own name on, and carry a fair stock of jewelry, diamonds and silverware. They also handle a full line of cut glass, fancy lamps and optical goods.

The re-establishing of the wholesale business of Heeren Bros. & Co., of Pittsburgh, Pa., which was so recently destroyed by fire (January 29, 1888,) shows the enterprise of the members of that firm, composed of Mr. Otto Heeren, Mr. William H. Heeren and Mr. William T. Hoffman. The fire occurred at No. 42 Fifth avenue, and completely destroyed the building which they have occupied for the past eight years, as well as the greater part of their stock outside of their large safes. This firm has been in the wholesale business in 5th avenue for the past 21 years, and have built up a trade that places them among the first of the wholesale dealers of that city. Their loss in this fire amounts to about sixty thousand dollars and their insurance is about fifty thousand dollars. They have already rented and are doing business in a large, new five story building, No. 525 Wood street. This building will be fitted up with cherry (finished natural) with French plate glass for all cases and counters, and in the most approved style. The first floor will be devoted to optical goods, materials and tools; second floor, watches and jewelry; third floor, silverware; fourth floor, clocks and bronzes; fifth floor, their factory. This firm are direct importers of optical goods, clocks and bronzes. They employ three travelers, and are well represented throughout Pennsylvania, Ohio, West Virginia, Indiana, Maryland and Virginia, and employ about 40 men in their business.

Goddard, Hill & Co., No. 43 Fifth avenue, report a very satisfactory business for 1887. This house has long been in the jobbing business in Pittsburgh, and are doing a very satisfactory business. They employ two travelers, and look well after the retail trade in Ohio, Michigan and Indiana.

Hodge, Slemmons & Co. report an increase in their business in 1887 of about 25 per cent. They occupy the second and third floors of No. 77 Fifth avenue, and are doing their share of the wholesale business. They are direct importers of clocks, bronzes and optical goods.

G. B. Barrett & Co., 101 Fifth avenue, report the largest trade in 1887 for a number of years past and are very well satisfied. They have the second and third floors of this building well stocked, and carry a full line of watches, jewelry, clocks, bronzes and optical goods. They import direct, and have two travelers who cover Pennsylvania, Ohio and West Virginia.

HARD SOLDER.

be their religious creed, for it is quite the thing to observe Lent, don't you know? Naturally, after these forty days of interruption of festivities, Easter is hailed by mi-lady as the advent of the spring season which in her vocabulary means another whirl of society pleasures. To the shop-keeper it means an increased trade and it is to meet this trade with new things that our retail dealers are holding back their novelties.

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For ten or more days previous to Easter, the dry goods stores and fashionable side-street modistes hold their preliminary spring exhibitions, known as "Easter Openings," when new bonnets and gowns fit for "the Sabbath of Joy" lead in spring apparel. The jewelers, about this same time, re-dress their cases and windows with productions gotten out since the holidays along with styles specially adopted to the summer season. For this last class, the intermediate penitential season brings a mild trade in so-called Easter goods. These goods include brooches and other pieces of jewelry in designs simulating Easter lilies, the passion flower, a dove, etc., but the leading feature consists in prayer books and hymnals enclosed in elegant binding. Some of these books are out in whole covers of silver. Among styles noted are those with silver covers overlaying leather binding and wrought in open or pierced work that shows the leather underneath. Another style of binding, and perhaps the most fashionable this season, is that consisting of silver covers ornamented in white enamel. Still other covers are of silver with scriptural designs etched thereon.

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THE silversmiths compete now-a-days with confectioners and fancy dealers, in supplying the fine trade with bonbonieres for Easter. The custom of sending bonbons at Easter-time has grown to be a decidedly luxurious one, in which the bonbons play an incidental part, the real gift being the beautiful receptacle in which the sweetmeats are placed. But of these goods more may be written another month. It is suffice to say now that there will be innumerable silver caskets equally appropriate as jewel boxes, glove boxes, etc., along with all sorts of baskets, vases, glass dishes in silver standards and gold and silver eggs that open in half.

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CANDLESTICKS and candelabra, that have come to be almost as popular here as in England since the fashion of wax lights for the dining room, came in, it is expected, will receive a fresh impetus with the approach of Easter-tide. Just why no one appears to know, only that with church festivals are more or less intimately associated wax candles and tapers of various kinds.

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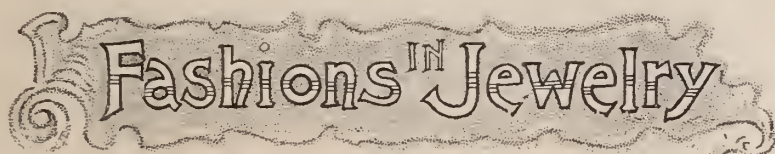
THE candlesticks are many of them exceedingly quaint and charming. In these as well as the more stately candelabra, both English and American patterns prevail. One sees occasionally in these, traces of Japanese and Chinese art; and there are some specimens in Russian styles. The candelabra are made with two, three, four, five or more lights to suit the purses of the buyers. Candlesticks and lamps of cut crystal are also to be seen as are low candlesticks for bed-rooms, in Dresden and Sevres wares.

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Of interest to the retail trade is the fact that cut glass retains its popularity in spite of the many novelties introduced, and is much used for rose bowls, celery and bonbon trays, pot-pourri jars and the like. Toilet articles come also in cut glass, and when found in



A Lady's Rambles Among the Jewelers

THERE is a decided scarcity of new things just now in the show cases of our retail dealers, it being early to introduce new styles even if they were ready to come from the factories. Easter falls this year on April 1st, and its advent has come to mean here, as it has ever done in England, the ending of winter and the beginning of spring. For forty days and nights—the period set apart by ecclesiastical rule for the penitential season—society folks rest from balls, receptions, Russian teas, the opera and similar dissipation, whatever may

conjunction with a jeweler's stock, are usually finished with stopples or covers of repoussé silver. This association of glass and silver appears to be growing. Very attractive claret jugs seen recently were of cut glass with silver stopples attached to the jugs by means of tiny silver chains.

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NOVELTIES in glassware from Nancy showing colored figures in relief, as well as cameo glass and choice porcelains with silver trimmings and mountings, figure as biscuit jars, bonbon trays, and salad bowls.

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EPERGNES always in demand, bear, as a rule, in form and decoration the same character as the candelabra used with them. An elegant epergne in the house beautiful is considered a necessity and surely no other one article of furniture adds more to the attractiveness of the dining table. An attractive design is one in old silver and art glass. The silver, of course, furnishing the standard and brackets while the bowls are of glass.

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SILVERWARE finished in gold and old silver is fashionable, especially in such decorative pieces as epergnes, nut bowls and bonbon trays. In these and similar articles occur some specimens in Russian decoration that are made decidedly gorgeous with gilding and colored enameling.

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IN both sterling silver and in plate ware occurs what is termed the old silver finish. An attractive illustration is furnished in French coffee sets in etched old silver, with wide bands of embossed floral designs.

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THE scores of styles, shapes, sizes and prices represented in both dinner and breakfast castors, argues that these articles are by no means obsolete, although kept from view on ceremonious occasions in New York City, where small peppers and salts are provided with each cover.

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SALAD castors are very generally used. These contain two bottles, one for oil and one for vinegar. Pickle castors are another standard article.

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THE very newest patterns in cake baskets, another table necessity, are in tray shape with straight sides and corners almost or quite square. The handles and sides are usually richly decorated. Other fashionable shapes are oval, round, square and oblong.

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SILVER pitchers show a pleasing variety in design; some are straight angular designs; some are curved graceful shapes; some have short necks, wide mouths and flaring lips; others are shaped like old time water jugs. The basket finish appears on some pitchers; others are fluted and engraved in spiral design, and there are some attractive specimens of etching in old silver.

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A NOTABLE feature of the holiday season, and one still evident, is the popularity of silver toilet articles and especially lavatory sets in

silver plate. These latter may comprise the same number of pieces as are furnished in china, or they may include only the smaller objects, such as soap dish, powder box, tooth brush holder, etc. A handsome lavatory set seen, and including basin and slop bowl, was in curved fluted style.

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THE sales of presentation pieces of silver for children, are restricted to no special months of the year, but have all seasons for their own. Independent cups, porringers, cups and saucers, knives, spoons and napkin rings, are furnished in new and pleasing designs both in sterling and plate ware. And here is as good a place as any to again call attention to the greatly increased use of the best plated ware among people of means as well as the poorer classes of patrons. Its enduring qualities, along with graceful designs and admirable finish, have advanced its popularity to a very noticeable extent among the fine trade.

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CONSPICUOUS among the newer goods are the silver trimmed leather objects, such as card cases, note books, visiting books, letter cases, portfolios and pocket books. Favorite leathers in the newest goods are pig and monkey skins, highly prized because they wear well. Lizard skins, mottled and of many shades, are also employed; so are the durable seal skin, kangaroo and morocco.

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THE silver mountings on leather goods represent many styles. Enamel is popular especially on prayer books and hymnals, and etching is another desirable finish.

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THE newer pocket books show a tendency to shorter and broader forms, although the great majority have by no means revived the square shape. The modified lengths, are however, the preferred sort.

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THERE appears to be an increased demand again for both gold and silver beads, which are worn about the neck in several strands forming a necklace of festooned strands. These beads had a good sale during the holiday season and promise to be a feature in the spring trade. Every one who has read the descriptions of toilettes worn both in Washington and New York, at recent receptions and weddings, cannot fail to have noticed the frequent mention of the strands of gold beads worn about the neck by ladies attired in *à la collette* dresses. The first row of beads fits closely around the throat; each after row, being a little longer than its predecessor, falls beneath it and when there are five or six strands, the effect is that of a very rich and elaborate necklace.

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THERE appears to be also a fancy for wearing rows of diamonds or rows of pearls about the neck, so fastened together as to show only the gems.

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NECKLACES are made in many styles; one seen recently was the slenderest of chains formed of alternate links of platinum and gold, with medium sized diamonds set in at intervals of about one inch apart. A fine oriental pearl necklace seen consisted of a strand of

pearls in fine gold setting, interrupted every fifth pearl by the introduction of a cluster setting of pearls.

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A UNIQUE necklace is a French importation representing the period of the Renaissance and introducing, in combination with fine gem-work, little gold designs of the human figure. So-called oriental necklaces, made of square blocks of gold in dull finish and etched or engraved in odd designs, may also be classed among novel things that go to make a variety, rather than models that will be extensively copied.

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THE association of gold and silver in jewelry, a comparatively new idea, promises to become quite popular and is already employed to a considerable extent. Hair pins and combs of oxidized silver, and decorated with little gold knobs or twisted gold wire, are very effective, and the same may be said for silver cuff buttons with gold ornamentation.

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ORNAMENTS for the hair in way of decorative hair pins, small combs and back combs, are, if possible, more fashionable than ever. The back combs, the newest comer in this line of goods, will be out for the spring trade in novel patterns. The prongs of both combs and pins are variously made of amber and dark colored tortoise shell, or of silver and of gold. The shell prongs are perhaps most popular with their ornamental tips of gold or silver.

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ANY one who has given attention to the matter must have noticed the exceeding popularity of enameled jewelry especially in the new flower patterns which include orchids, morning-glories, wild roses, double English violets, lilies and the passion flower. Abroad, animals in miniature are popular in this enameled jewelry, such as poodle dogs and cats. Wasps, swallows and spiders also appear.

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NUMBERED with novelties are the imported "gold bird brooches." These brooches come in a series. Number one, simulates in gold, a single owl on a branch and is called "Single Blessedness." Number two shows on a somewhat larger branch two owls, and is known as "Matrimonial Bliss" brooch. Number three, termed "Happy Family" pin, is represented by a branch with three off-shoots on which sit the parent birds and one tiny baby owl.

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ABROAD, enameled jubilee coins are still worn as brooches, but I have seen little coin jewelry here of late, except veritable antique coins in silver, made into bracelets or cuff buttons. These latter are, of course, always interesting as well as valuable.

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IN Paris, if we may believe all we hear, diamond mouse jewelry is competing with diamond flies and birds. We are also told that some of the extravagant French women are wearing a trimming of tiny diamonds on their gloves in place of the conventional stitching on the back. We are furthermore assured that fancy walking sticks promise to become fashionable among ladies. I do not pretend to verify these echoes of extravagant and remarkable fancies from across the sea, but I do believe that the increased employment of silver jewelry at weddings is in part due to the fact that the Princess

of Wales is just now naturally affecting this sort of thing, as this year brings the silver wedding of the Prince and Princess.

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WITH the increased demand for silver jewelry has come a wonderful array of personal adornments that are genuine works of art, objects which must always be of more or less value. Included among these are watches in decorative cases, things to be seen but impossible to describe.

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THE English fashion of silver finger rings prevails, in New York at least, to a large extent and among both sexes. These rings are for the most part fanciful in design, and the more costly ones are set with gems.

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THERE is an endless variety in gold finger rings. Jeweled hoops and the marquise shape are popular styles, as is the cluster. It goes without the telling that no lady's collection of finger rings is complete without at least one solitaire ring.

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THERE does not appear to be much that is new in bracelets. Hollow wire bracelets represent a popular ornament. Some very attractive ornaments seen consist of a slender gold wire on which was mounted one rare gem, as a large fine emerald or a rare colored sapphire. A gold butterfly bangle set with pearls and recently seen was another attractive specimen.

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THE announcement made last month that earrings are steadily increasing in favor holds true, as any one may prove by looking through the stock of either manufacturer or retail dealer. The ear knobs or screws, set with single small gems, and also in fancy patterns, lead perhaps in popularity. The little flower patterns are favorites in these ornaments.

ELSIE BEE.

Robberies by Memorandum.



MEMBERS of the jewelry trade have recently had some severe experiences of the manner in which robberies by memorandum can be practiced by shrewd and unscrupulous swindlers. Any recognized dealer or any hanger-on of the trade who has contrived to gain the confidence of a dealer, can obtain all the goods he wants through the medium of this most pernicious system, and his victim is usually left without any redress whatever. The offence of the memorandum fiend is a difficult one to classify, and the courts have been seriously puzzled to know what charge to entertain against one accused of having appropriated the goods thus entrusted to him. The fact that the goods are voluntarily placed in his possession by their owner, is a strong point in enabling him to escape punishment. He may dispose of the goods without accounting for them promptly, but as he was expected to dispose of them his doing so does not constitute larceny, and the victim can only obtain redress by civil suit, which usually means a total loss, for the perpetrator of the fraud is usually wholly irresponsible. In a recent fraudulent bankruptcy case, it cropped out that the bankrupt, after he was fully aware of his insolvent condition, went about ordering goods on memorandum, and when the crash came neither the goods nor the proceeds of their sale could be found. Yet this man's credit had been so precarious

for a long time that some houses with which he dealt had limited his credit to the immediate demands of his trade, but in other directions he could obtain all the goods he wanted, simply because those to whom he applied did not take the trouble to inform themselves as to his condition or the character of the business he was doing. As a consequence, he was enabled to perpetrate one of the most scandalous failures that has occurred in this vicinity in a long time. In another case, a diamond merchant entrusted some valuable diamonds to a broker on memorandum, but sought to protect himself by a written document setting forth that the title of the goods remained in the merchant. The broker sold the diamonds but failed to account for the proceeds. The merchant brought suit against the purchaser, relying upon the written document showing that the goods were his and not the broker's. The court, however, did not recognize the claim, holding substantially that the broker was the agent of the owner, and that the purchaser of the goods could not be made to pay for them a second time simply because the agent had failed to account to his principal. The memorandum system is subject to any number of abuses, and the person who parts with his goods in this way has very little redress. As a general thing, where the person obtaining the goods shows a disposition to be tricky, the owner loses his goods and throws away any money he may spend in an attempt to recover them. If the practice of sending out goods on memorandum was limited to regular dealers there would be little danger of its being abused, and it would frequently be of service to all interested; but the practice of trusting goods to anybody on memorandum on their representation that they have a possible customer for them, is full of danger and is an abuse that should be put an end to. In fact, there is no necessity for brokers in the jewelry business; they are middlemen who expect to make a profit out of both ends of any transaction they engage in, and being wholly irresponsible, they do much to bring the trade into disrepute. It is said in their behalf that they sometimes secure customers who would not become buyers except under the pressure they exert, but we venture the assertion that more trade is lost through their misrepresentations and shortcomings than is influenced by them in the right direction. There are regular dealers enough to supply the demands of consumers, and every sale made by a curbstone broker is so much diverted from legitimate channels. Middlemen are conceded to be a nuisance in almost every other line of business, and they certainly are in the jewelry trade, doing more harm than good. They are the ones who are responsible for the greater portion of the abuses in connection with the memorandum business in this city, and it is time they were weeded out. The trade takes chances enough with those who are recognized as legitimate dealers, without embarrassing itself with a lot of excrescences that care nothing for the business beyond what they can make out of it, regardless of the means employed to do so.



Although business for February has been hardly up to the average of January, the jobbing trade is in excellent spirits, and buzzing with activity. Most of the leading houses have their travelers in, and are busily engaged filling their trunks with fine lines of new goods. As the ice and snow which have bound the fastnesses of Minnesota, Dakota and other parts of the great Northwest, are now beginning to break up, the travelers hope ere long to pierce their way to the remoter points, which for months have been practically inaccessible. Those who have been on the road in the more southern States, where the ice king has not been holding carnival, report

excellent business, and the collections have been for the season remarkably good.

The wholesale trade never expects to do very big business in February, and the fact that all the leading houses report an increase over the corresponding month in last year is a very encouraging feature of the present condition of business. Otto Young & Co. say that they are just as busy as they can be without working overtime. Benj. Allen & Co. have their hands full. Giles, Bro. & Co. are doing a fine business, and the order department of B. F. Norris, Alister & Co. finds its mail unusually heavy for the season of the year.

Stein & Ellbogen continue to do a solid, conservative business in both jewelry and diamonds, and are keeping well to the front.

Mr. Grout, of the Excelsior Sign Company, is still laboring to improve the design of his "Father Time" watch sign, and the cuts which he has spent so much time in evolving will reveal really fine artistic work.

Mr. Louis Manheimer, who was in New York during the early part of February, returned to business on Feb. 8th.

Mr. Leo Felsenthal, of the firm of A. & L. Felsenthal, wholesale jewelers, 170 State street, was married to Miss Tillie Hershman, at the West Chicago Club House on the evening of Feb. 7th.

Mr. L. W. Flershem, of Lapp & Flershem, left for the East on a three weeks' business trip on Thursday, Feb. 9.

Mr. Max Young, the brother of Mr. Otto Young, is understood to have commenced business on Wabash avenue, near 30th street.

Owing to their rapidly increasing business, the Holmes & Edwards Silver Co. have been compelled to enlarge their salesrooms. The firm speaks highly of its new solid silver inlaid spoon, which will soon be in the market.

The Chicago Jeweler, which succeeded *The Watchmaker and Metal Worker*, and is edited by Mr. Geo. H. Crawford, formerly of the Jewelers' Mercantile Agency, appeared early in February. It will be run as a monthly.

Benj. Allen, Otto Young, L. W. Flershem, President Avery and Agent Cutter, of the Elgin National Watch Co., and Hahn and Sonnenschein all left for New York early last month to attend the important session of the National Association of Jobbers in American Watches.

A rather startling development occurred in the Newhouse case on Feb. 14th, when Mrs. Anna Newhouse, wife of Mr. Leopold Newhouse, of Glickauf & Newhouse, through her attorney, relinquished all claim to the \$2,000 of money found in the vaults of the National Safety Deposit Company. Mr. Ferdinand Newhouse, a brother of Max Newhouse, who failed, also surrendered his claim to \$800 found in the same place. Judge Prendergast ordered that the money be turned over to the assignee. The court dismissed the contempt proceedings against Mrs. Anna Newhouse on the ground that she had acted in concert with her husband, and he being punished, she had shared his punishment.

Mr. John Kenmare, a well-known jeweler of St. Joe, Mo., who for many years used to do the second largest business at Leavenworth, Kas., died early last month.

Mr. Abraham Britner of the Keystone Watch Co., Lancaster, Pa., was in the city on Feb. 8th and 9th, in the interest of the organization of a company for the manufacture of watch dials at Lancaster under letters patent.

Mr. B. F. Bergland, of Toledo, Ohio, has closed out and gone to work for the Peoria Watch Factory.

Yarnell & Robinson, of Loogotee, Ind., have dissolved partnership. The firm name is now C. B. Yarnell.

Mr. C. F. Richert, of Cloquet, Minn., takes up the business of Page & Richert.

Mr. D. W. Brattin has closed out his jewelry business at Greencastle, Ind.

The parlor jewelry store of P. S. Bartlett & Co., at Elgin, Ill., has been favorably noticed in the local papers.

Mr. Louis Bohling, formerly of Cameron, Mo., has located in Kansas City. Mr. L. Garton, once in the jewelry business at the same place, has followed Mr. Bohling's example.

Mr. W. E. Crellin, of Chillicothe, Mo., has taken his brother into partnership, and the firm will henceforward be known as W. E. Crellin & Co.

Dabney & Baity is the new name of the lottery firm at La Plata which used to be E. B. Dabney. Mr. Dabney expects increased business with his new partner.

Mr. L. Schneider, of Fort Madison, Ia., who intends shortly to retire from the cares of business life, has just erected an exceptionally handsome store in the best business section of the town, and will shortly turn the store over to his two sons, who show excellent business capacity.

Mr. F. L. Taylor, a well-known jeweler of Aurora, Ill., who has been for some time suffering from a severe attack of lung fever, is now on the fair way to recovery, and expects soon to be back to business again.

An elegant new store fitted with all the latest improvements known to the trade, is being finished for Mr. W. A. Bowen, of Kewanee, Ill. Mr. Bowen expects to open within a few weeks.

The rumor is still in circulation that Tiffany, of New York, will shortly open a fine retail store in Chicago. It has even been said that the firm has secured a lease of the property at the southwest corner of State and Washington streets. The rumor, however, is not taken much stock in by many of the best posted men in the trade.

A great surprise recently befell Mr. William E. Germann, of Aurora. Many years ago he was presented with a pin by one of his relatives in the old country. The pin, which was in the form of a cross, contained nine stones. Often did he cast the pin aside when chaffed by his friends about wearing paste or glass beads. He knew the pin was gold, and being anxious to know if the supposed glass beads were worth enough to pay for the cost of removing them, he took the pin to a jeweler. The jeweler, after a careful examination, pronounced the glass beads to be diamonds worth at least \$1,200.

Among other deaths that occurred in the trade during the early part of February, were those of W. E. Hunt, Grand Rapids, Mich.; and H. McIntosh, of McIntosh & Son, Clinton, Ill.; F. E. Aken, Douglas, Wyo. Ter.; E. L. Isham, Grand Junction, Colo.; and Moses Wingert, Fife Lake, Mich.

The family of Mr. W. W. Wilcox, the editor of *The Jewelers' Journal* of this city, was thrown into mourning on Monday, January 30, by the sudden death of their youngest daughter, Hattie, the wife of Mr. L. G. Call, now with Simpson, Hall, Miller & Co. The deceased was a lady of rare virtues and accomplishments, and her loss is deeply deplored by her heart-broken young husband and sorrowing family. Mrs. Call was quietly laid to rest in Oakwoods Cemetery on February 2, the first anniversary of her wedding. What makes the sad event still more painful is the fact that Mr. Wilcox, who had left his daughter in the best of health and spirits, was absent on an eastern business trip when the end came.

Sampson & Co., of Princeton, Ill., have gone out of the business.

Seem & Moore, of Macomb, Ill., have dissolved partnership. Mr. Moore will go entirely out of the business, but Mr. Seem will stick to his stand and make a specialty of spectacles.

Mr. George H. Edwards, one of the travelers for the Wm. L. Gilbert Clock Co., has purchased an interest in the jewelry firm of S. D. Mills & Co., Kansas City, Mo. Mr. Edwards, however, will not sever his connection with the Gilbert Company.

Among the well-known jewelers from all parts of the West and Northwest who have been in Chicago on business during the month were: F. Lemon, Aledo, Ill.; Z. Riley, Champaign, Ill.; Theo. Dickman; J. Wallo, Racine, Wis.; R. A. Harris, Wakefield, Mich.; H. Backstruck, St. Paul, Minn.; L. C. Garwood, Champaign, Ill.;

Hermann Oberreich, La Porte, Ind.; S. F. Howard, Indianola, Ia.; M. Hansen, Boone, Ia.; E. H. Griffin, Blue Mound, Kas.; H. L. Mark, Shapokee, Minn.; E. C. Arosin, St. Paul, Minn.

W. A. B.

Hints to Practical Opticians.

[BY C. A. BUCKLIN, A. M., M. D., NEW YORK.]



O MANY letters of enquiry upon thoroughly practical subjects interesting to the optician have been received from patrons of this journal that I shall be obliged to occupy most of my usual space in publishing and commenting upon them. It is a pleasure to receive intelligent letters of enquiry; they are not only positive evidence that the interest in this great subject, Practical Optics as applied to the relief of human suffering, is constantly increasing, but they also furnishing a most practical means of impressing on a set of men who are following the optical trade the difficulties they will probably encounter.

I have always found the publication and answering of letters of enquiry quite as interesting to opticians as any original manuscript.

Dr. C. A. BUCKLIN : AMESBURY, MASS., Feb. 10th, 1888.

Dear Sir—We have a friend here whose eyes I have examined to see if I could tell what the trouble was, and I write you to see if you will tell me whether I am correct or not.

With his left eye he is Hyperopic $\frac{1}{4}$; his right eye is peculiar—the lines on the astigmatic fan look broken and seem to move. When he tries to read, some of the letters in the words seem to be tipped and seem to move; straight lines look wavy; my idea is that this is a case of irregular vision (Metamorphopsia). I shall be greatly pleased if you will give this an answer as you see I am quite interested and will give you a description of the case as well as I can.

The gentleman is a clergyman, about 35 years of age; in robust health; always had trouble with his eyes; in his youth, at first there would seem to waves rise up before him like heat rising, followed by severe headache; these attacks continued at shorter intervals each year until about seven years ago; he had them every week and was told he must not use his eyes at all or he would loose his sight entirely; this was in Iowa; soon afterward he came to Columbus and again had his eyes tested but with no satisfactory results; he then came to Boston, to a Dr. Angel, who gave him some glasses and told him he must not use them over half an hour at a time as by that time they become very painful; he then went to Holt, of Portland, Maine, who gave him the glasses he now wears, $+\frac{1}{4}$ for both eyes; he was able to read all day without any ill effects; he has never had much trouble since. Holt told him his trouble was caused by a faulty corner, and he had to have a glass ground to overcome his trouble; we have analyzed the glasses and find them to be simple $+\frac{1}{4}$. I am sorry to take so much of your time, but I feel quite anxious to know whether I have the correct view of the case.

Our Ophthalmoscope had not arrived so I could not make any examination.

An early reply will greatly oblige, Yours truly,

MARY F. HENDERSON.

Mrs. H. is entirely correct in her conclusions; the only element in this case which gives to it peculiarities not possessed by ordinary

cases of hyperopia is an old retinitis which has so displaced the rods and cones of the retina so that the retinal image from a straight line no longer faces upon the line of cones from the sensations of which our intellect has been educated to associate the idea of a line being straight.

Retinal cones through which several straight lines formerly passed have been so disturbed that one straight line touches these several straight lines of displaced cones; the result is a straight line appears wavy. One can never judge from the statements of a patient what any given specialist thinks is the cause of their trouble. Patients very generally fail to understand and repeat correctly just what they are told regarding their bodily infirmities.

Dr. C. A. BUCKLIN :

January 19th, 1888.

Dear Sir—I have come again for advice. I just tested a lady's eyes who sees all right at the required distance. Vision perfect as far as I can determine; overcomes a $-\frac{1}{16}$ lens at 14 inches but cannot overcome a 7 degree prism, base out or a 1 degree prism base in. What would I have to give her to help her most for strength, etc., and would she have to wear them all of the time. Case 2—I have given a person this :

R. V. $-\frac{1}{20}$ C. $-\frac{1}{2}$ c. ax. 180.

L. V. Plain.

This brings him up all right, and both eyes have the same focus with that correction, but they are not easy to wear. Ought I to insist on his wearing them and getting used to them, or will I let him think they are not right or do you think are they off. Please answer at once and oblige.

Am getting along very well with the work. This is the only case where it is not perfectly satisfactory. Respectfully,

JOHN MARSH.

Case 1, described in the above letter is a complicated one.

The case requires *semi-weekly* exercise of the muscles with prisms. Medical treatment of a tonic nature, possibly iodide of potassium, is indicated. The additional treatment of these weak muscles by electricity would also improve them. Exercise of the muscles by prisms is, however, a very important part of the treatment. Later, the selection of prisms, if required, is a very delicate question. If upon thorough education the person can only overcome 7° of prism with his internal muscles and 1° of prism with his external muscles, the question would be where does she experience the greatest fatigue when attempting to look at distant objects or near objects. Possibly it would be either or both sides. The difference between the relative powers of the two sets of muscles is not far from normal. She might require weak prisms, base out, for constant wear and weak prisms, base in, for near work.

The case as presented is a very complicated one and the answer to the questions involved can only be given as the result of *direct* and *repeated* experiment with the patient. After everything has been done which is possible, to improve the tone of her muscles, which are certainly at the present date in a very weak state, neither *lens*, *medicine* or *man* can overcome *some* of the ocular defects which torment certain individuals.

Case 2.—I should think the simple cylinder before one eye and plain glasses before other would answer best. Your glasses are scientifically correct but individuals of this class have during a lifetime read with the near-sighted eye and used the other eye for distance. It is difficult to unlearn a habit which has existed for a lifetime.

The use of the cylindrical glass before a myopic eye having astigmatism always improves the myopic eye as a reading organ. When the myopia is under $\frac{1}{8}$ the use of concave lenses usually does not improve the reading in the myopic eye.

Dr. C. A. BUCKLIN :

I take the liberty of asking a question. Is it correct to test astigmatism at 20 feet when you intend to confine with a glass for presbyopia? When a man who wears +20 for presbyopia and complains of his eyes aching and his internal and external muscles *all the same*,

namely 8° prism *each*, how many degrees of prism in *each* eye will relieve him? I would thank you very much if you would kindly answer these questions. I am very much pleased with the knowledge gained while with you. My business in optical goods is gaining right along much to my delight as I am very fond of that style of work.

Sincerely yours,

C. J. MONSON, Jr.

Question 1—All errors of refraction are tested at 20 feet. Astigmatism is an error of refraction, and, consequently, never an exception to the rule. Having determined the degree of astigmatism by the test of vision at 20 feet, allow the cylinders to remain before the eyes when you desire to correct presbyopia, then give the patient fine print and select the weakest convex lenses which will enable the patient to read with perfect comfort. These lenses are always tried over the cylinders which were selected at the previous trial.

Question 2—If after repeatedly exercising the muscles with prisms you cannot improve the strength of the internal muscles, I should think prism 2°, base in, should relieve the trouble complained of.

Dr. BUCKLIN :

PORTLAND, Jan. 14, 1888.

Dear Sir—Will you kindly give me your opinion in regard to the following: Little girl, cross-eyed, has been so about 3 years; either eye straight with the other covered. Only $\frac{1}{16}$ hyperopia seems to exist, unless now manifest. With +60 lenses will straighten and remain so until they get tired, but when glasses are removed will cross at once and straighten at once when replaced.

Do you think they would become crossed by so slight an error and if so, are not such cases very uncommon, and do you think the proper glasses will make them straight? Yours truly,

A. M. WENTWORTH.

If an atropine solution of one grain to two fluid drachms of water be dropped into the *straight* eye three times at intervals of six hours by the family physician and the child is then tried with convex lenses, we will probably find the degree of hyperopia much higher. I am afraid that $+\frac{1}{16}$ simply makes the child appear *less* cross-eyed. Proper convex glasses should be worn for some years continually. The subject of convergent strabismus is a very lengthy and complicated one. It will be dealt with at length in a special article devoted to this subject at some future time.

The school for the training of those desiring to become skilled opticians still progresses.

The names of the class which finish February 21, were as follows:

Fremont Chapin, Oneida, N. Y.; Theodore V. Meger, Waterbury, Ct.; Edward L. McKenzie, Montrose, Pa.; Henry Waldeck, Jr., Milwaukee, Wis.; Frederick L. Wilson, Danbury, Ct.

Two classes will probably fill for March. It is desired to fill one for March 10th.

A NEW THERMOMETER.—A Frenchman has devised a thermometer of such sensitiveness, that it will even denote, by a deflection of two inches of the index needle, the entrance of a person where it is placed, and by putting a hand near the bulb, the needle is deflected the whole extent of the graduated arc. The apparatus consists of a beat tube, carrying at one end a bulb which is coated externally with lampblack. The tube is fitted to a certain extent with mercury, and is supported by arms pivoting on a steel knife-blade. Just above the pivot is fixed an index needle which moves across a graduated arc; and beneath the pivot hangs a rod, to which is attached by friction a small weight that serves to balance the needle so as to cause it to point to zero on the arc. When the temperature rises, be it ever so slightly, the heat being absorbed by the lampblack, dilates the air in the bulb, and drives the mercury forward. The center of gravity of the apparatus being displaced, the needle will immediately turn toward the right; and when, on the contrary, the temperature decreases, the needle will point toward the left.



* A Complete History of Watch and Clock Making in America.

[By CHAS. S. CROSSMAN.]

Continued from page 42, February, 1888.

Number Twenty-one.

ALBERT TROLLER AND THE WESTERN WATCH CO.



R. ALBERT TROLLER occupied the position of foreman of the springing and finishing department of the California Watch Co. during its brief career. About the first of January, 1877, he decided to lease the factory and machinery of that company which had lain idle for nearly a year, and finish up the material which had been left unfinished by that company. He entered into a contract with Messrs. Glickauf & Newhouse, of San Francisco, who agreed to take all the watches as soon as finished. He obtained a lease of the factory for four months, purchased the unfinished material and proceeded to complete the work. By May 1 he had suc-

ceeded in working up nearly all the material, and he then moved to 57 California street, San Francisco, where he completed the work. A number of employees of the old California Company, who still remained in the West, were, by this short season of work, enabled to earn sufficient money to take them East again. Mr. Troller also returned to Chicago in the fall of 1877 and opened a small store at 82 South State street.

Here he did a small manufacturing and repairing business, making work for the trade a specialty. He remained there until the spring of 1880, when the Western Watch Co was organized. The company was composed of Mr. Paul Cornell and Mr. Troller, of Chicago, Mr. John Miller, of Paducah, Ky., and Mr. L. A. Horn, of Humboldt, Tenn., the two latter ones mentioned were retail jewelers. The capital stock was placed at \$10,000, Mr. Troller putting in his tools as part of the capital. The company bought a lot 50x135 at Grand Crossing, near the site of the Cornell Company's factory. Here they erected a two story brick building 22x80, and a boiler house with a fifteen horse power engine. Mr. Troller, who was, of course, the Superintendent, had a few machines which he had bought of the California Company, and they purchased more machinery of Mr. Sawyer, of Fitchburg, Mass., and fitted up a small machine shop. It was the intention to manufacture a regular 18 size full plate watch. None of these were ever made, but a few of the old California movements were finished for which Mr. Troller had material still remaining. The company ran about four months, at the end of which time the capital became exhausted and the shop was closed. The capital stock was then raised to \$25,000 (on paper) so the increase did not avail. Most of the machinery of the company was subsequently sold to the

Illinois Watch Co., and Mr. Troller has taken the position of Superintendent of the Rockford Watch Company.

CHESHIRE WATCH COMPANY.

The man above all others to whom credit should be given for the conception of a real watch company in the little quiet village of Cheshire, nestling among the Connecticut hills, about 13 miles north of New Haven, is Mr. Geo. J. Capewell, assisted, to some extent, by Mr. Arthur E. Hotchkiss, now connected with the Cheshire Clock Co. That which distinguishes the town specially from the neighboring ones is the old copper mines, which were worked by the Spaniards as far back as the year 1600.

Mr. Capewell is, perhaps, better known in another connection—that of the inventor of the Capewell horseshoe nail, which is extensively manufactured in the city of Hartford. He commenced to agitate the matter of a watch company among his townspeople and monied friends in the summer of 1883, and it resulted in the formation of a company under the joint stock laws of Connecticut in October following, with a paid up capital of \$100,000. Mr. Capewell was elected President, and Mr. E. R. Brown, Secretary and Treasurer. Immediately after the formation of the company, a few acres of land were presented to the company by Mr. A. E. Hotchkiss, beautifully situated in the upper part of town, and a factory was commenced which was finished and occupied about a year later. The main building is 200 feet long and 30 feet wide; the central building is 40 feet square and two stories high. Mr. D. A. A. Buck was engaged as Superintendent in the spring of 1884, and commenced in a small way with a few men in Waterbury to make tools and machinery, but did not do anything towards making a watch until their removal to Cheshire in the fall. It was expected at the time the company was formed they would make the watch invented by Mr. Hotchkiss. It was a cylinder escapement, and had lantern pinions with the leaves supported at one end only by being driven into a solid brass hub on the staff the wheels were soldered to this hub. It was not found, however, to be a practical watch and it was dropped, and Mr. Hotchkiss' connection with the company ceased.

After Mr. Buck became Superintendent he made a model of a lever watch which they concluded to make. It is 18 size, and may be spoken of as a three-quarter plate movement. The balance swings on level with the top plate. They are all gilt plates, stem wind and set, with the pendant attached to the movement so it can be lifted out of the case by the pendant when the bezel is taken off.

This arrangement is one of the distinguishing features of the watch. They all have steel roller pins, and pallet stones. The company case all their movements in special cases, mostly nickel, and sell them as complete watches. They are sold through the jobbers only and are among the most popular cheap watches in the market at present. They sell in nickel cases at retail at \$5. Mr. N. Brigham Hall was elected Secretary and Treasurer February 1, 1885, which office he still holds. The capital was increased in April following to \$150,000. In October Mr. Buck resigned, and Mr. Hall acted as General Manager until February, 1887, with the assistance of the foremen of the various departments, Mr. F. L. Wilkinson having charge of plate and case room, Mr. A. L. Reeve the train and escapement room, Mr. F. H. Keegan the finishing department, and Mr. Paul Simon the machine shop. In February, 1887, Mr. Henry Oehl was appointed Superintendent, which position he still retains. The first watch was turned out in April, 1885, and was essentially the same as those now made and which we have just described, except they had steel cap jewels which were soon replaced, however, for the regular cap jewels, as the difference in expense was trifling, while the advantage of the latter was soon proven. At the annual meeting in July, 1886, Mr. Capewell, owing to other business engagements and absence in Europe, declined re-election, and Mr. John Pearce, of Philadelphia, was elected to the presidency, which office he filled until October, 1887, when ill-health forced him to resign, and Mr. Capewell was again honored with the office. The production has steadily

increased until it has reached an average of 150 per day and at times 200 per day for a short period. In the summer of 1887 it was decided to make an 18 size $\frac{3}{4}$ plate movement to fit regular American cases, and when this is completed, as it will be soon, the same train will be used in the original three-quarter plate movement, which will give it a second hand which has not been possible to put on heretofore as the old train is not properly arranged for it. The capital of the company has been increased to \$250,000 recently, and with this additional financial strength, the indomitable push and energy of its officers combined with careful management, we bespeak for the company a long and prosperous career.

THE NEW HAVEN AND TRENTON WATCH CO.

This Company was organized on the 16th day October, 1883, with a capital of \$100,000, which was mostly furnished by gentlemen residing in New York City and Trenton, N. J., New Haven people seeming to take but little interest in the enterprise; perhaps it was, however, from the fact that their aid was not solicited. The reason given for locating their factory at New Haven, was that they wanted to be near the help of other Eastern watch factories. Mr. Aaron Carter of the firm of Messrs. Carter, Sloan & Co., manufacturing jewelers of New York city, was elected president; Mr. L. J. Mulford, formerly of Hale & Mulford, was elected treasurer; G. S. Glen, was made secretary, which office he filled for the first year, after which time the duties were undertaken by Mr. Mulford, in conjunction with his own as treasurer, until his retirement from the company in January, 1887, when he was succeeded by Mr. J. C. Thomas, as secretary, and Mr. W. F. Van Camp, as treasurer. No active move was made by them until January 1st, 1884, when the building which they occupied (until their removal to Trenton,) was leased. It is situated on Day street, near Chapel, in one of the most beautiful parts of the city of New Haven. It is a two story brick building with basement and was formerly occupied by other manufacturing interests. The company fitted up the building and made it suitable for its purpose, putting in machinery which they had built for them. Mr. S. T. J. Byam was appointed superintendent, which position he still holds. It was the intention of the company at the commencement to make W. E. Doolittle's patented watch; this plan was, however, soon abandoned and work was commenced on a regular 18 size lever watch movement, which the Trenton company are now making and casing.

But before we speak further of this movement we will speak of the change in the company, both of name and location.

The original capital became absorbed and it seemed necessary to look out for a locality where additional capital could be raised. Mr. J. Hart Brewer, now president, but at that time one of the directors, thought he saw a good opportunity to do a good thing for the City of Trenton and at the same time put the company on its feet financially. He proposed to them to raise the necessary capital in Trenton, if they (the company) would remove the works there, which was an easy thing to do as they occupied a rented building. As a result of this proposal and through the efforts of Mr. Brewer, the capital was increased to \$250,000 early in 1886, and about three acres of land were purchased near the Penn. R. R. depot, in Chambersburg, a suburb of Trenton. Ground was at once broken for a factory building, which is one of the best of its size yet built. It is of brick, the front 45 by 50 feet, and is occupied by the officers, the setting up and finishing rooms, etc., and the wing running back with its L being 32 x 100 and 23 x 80 respectively, is used for general factory purposes. The building was completed by December following so it could be occupied and the works were removed to their new quarters which, when all their machinery is completed, will have a capacity of 500 watches per day. Up to the time they removed to Trenton they had finished about 1,000 movements but no cases, so they had not really put any watches on the market, but as soon as they were settled in Trenton, they commenced making their own nickel cases so as to turn out a complete watch; they also put them in gold

filled and plated cases. The present out-put somewhat exceeds 150 per day with a steady gain. They now have 160 employees. The watches sell to the trade at \$3.75 each and are sold direct to the retail trade by the company. Since the company's removal to Trenton, the capital has been increased to \$300,000, where it now stands. Mr. J. Hart Brewer has succeeded Mr. Carter, as president, and Mr. Geo. R. Whitaker has succeeded Mr. W. F. Van Camp, as treasurer. The present board of directors is composed of Messrs. J. Hart Brewer, Sam'l K. Wilson, Lawrence Farrel, Gen'l W. S. Stryker, Wm. Roberts, and John Moses, of Trenton, and Theo. W. Burger, of New York.

It is generally understood that they will soon commence the manufacture of a novel watch, which was recently patented by Mr. Albert H. Potter, of Geneva, Switzerland, and assigned to them, but as this is not yet a matter of history it is too early for us to speak further on it. The outlook for the company seems to be bright at present, and the wisdom of the change in location seems to be fully demonstrated already with the possibility of greater advances in the future both mechanically and financially.



[THE CIRCULAR is not responsible for the opinions or statements of contributors, but is willing to accord space to all who desire to write on subjects of interest to the jewelry trade. All communications must be accompanied by a responsible name as a guarantee of good faith. No attention will be paid to anonymous letters. Correspondence solicited.]

SAMPLE BUSINESS LETTERS.

To the Editor of the Jewelers' Circular:

I have been without your invaluable paper about a year but find I cannot endure it any longer, so please send me your paper this year including January, and also as many back numbers of 1887 as you can. Enclosed find \$3, and oblige,

R. E. BYWATER.

Trenton, Ont., January 31, 1888.

To the Editor of the Jewelers' Circular:

Enclosed find \$2 for subscription for 1888. Excuse delay; I can only plead partial carelessness and the rush of the season. Trade has been good and still fair. I value your publication very much as it is the best medium extant for jewelers like myself that are away from the centers of trade to keep posted by, as we do not see the goods in stock and seldom see a drummer, and if we don't take the best trade journals we will be behind the times. I take four but I must have THE CIRCULAR; it is solid every time. I shall send for two of the books you advertise soon. Accept best wishes.

Surrency, Ga., January 22, 1888.

J. J. GIBBS.

To the Editor of the Jewelers' Circular:

Please find enclosed two dollars, and allow me to become a subscriber to your valuable journal, THE JEWELERS' CIRCULAR. Please begin with February number, and I would like the back monogram sheets. Please send the monthly advance sheet of styles and oblige,

Knowlton, Quebec, February 6, 1888.

MOSES H. BEDEE.

To the Editor of the Jewelers' Circular:

Enclosed please find postal note for two dollars for one year's subscription to THE CIRCULAR, and also for the monogram plates from February, 1887. I am very glad that you have given us jewelers an opportunity to get these plates so cheap. I wouldn't take two dollars for the sample number of February alone if I couldn't

get another. I would have taken THE CIRCULAR last year if I had known of the valuable contents in it.

Alma, Mich., February 17, 1888.

Respt. yours,

G. B. PORTER.

To the Editor of the Jewelers' Circular.

Enclosed you will find \$2 to pay for this year's JEWELERS' CIRCULAR. The two pages with the monograms have been a great help to us for making monograms, etc. In fact, everything in THE CIRCULAR has been of great interest to us, and we are always glad when THE CIRCULAR makes its appearance.

Truly yours,

BUDER BROTHERS.

Columbus, Miss., February 13, 1888.

BACK NUMBERS OF THE CIRCULAR WANTED.

To the Editor of the Jewelers' Circular:

Can you furnish me complete volumes of Vols. 12, 11, 10, 9, or earlier volumes of THE JEWELERS' CIRCULAR. I have from 13 up all bound, and would like to get the earlier volumes. I also have 4 numbers of Vol. 11. If you can furnish me these volumes, or any of them, please let me know at what price; also if you can furnish me with odd numbers of Vol. 11.

Yours truly,

Chicago, January 23, 1888.

S. T. NICKERSON.

To the Editor of the Jewelers' Circular:

Can you send us No. 1 of last volume—February, 1887? We have mislaid it and want it for binding.

E. T. WEBB & Co.

Jackson, Mich.

WANTED: A MOZART WATCH.

To the Editor of the Jewelers' Circular:

In Crossman's History of Watch and Clock Making, the Mozart watch is mentioned. I would like to get one of these as a curiosity. Do you know where I can get one?

W. S. MILLS.

Warren, R. I.

[We do not. There were only about 30 of these movements ever made, and some of them were destroyed in the great fire in Chicago. If any of our readers have one they wish to dispose of they may correspond with Mr. Mills about it.—ED.]

OUR MONOGRAM PLATES APPRECIATED.

To the Editor of the Jewelers' Circular:

The monogram plates were received all right and I am very much obliged for them. I have taken THE CIRCULAR since 1876 and have always been pleased with it, and shall probably keep up my subscription as long as I need such a magazine.

Yours respectfully,

W. D. JACOBUS.

Elmira, N. Y., February 9, 1888.

THE COLUMBUS WATCH CO.

To the Editor of the Jewelers' Circular:

We notice in your February issue an article on the Columbus Watch Co. We appreciate the insertion of the same, but the latter part, in regard to our present capacity, the number of people employed and our output or product, does not do us justice or properly portray the condition of our factory at the present time, and we would be pleased to have you make mention of these facts in your next issue. The article must have been compiled by Mr. Crossman two years ago, and would have properly applied to us at that time, but we have made such rapid progress since then and our business has grown to such an extent that it has been necessary for us to largely increase our facilities. We are now employing over 300 hands, with a capacity of 150 watches a day. Preparations are made for the increase of the capacity to 300 watches per day as soon as good management can bring it to that point, and the retaining of

the present excellence of quality of our watches will permit. Instead of selling direct to the retail dealers as formerly, we are confining ourselves exclusively to the jobbing trade. We only regret that you did not submit the manuscript to us before printing, that we might have set you aright in regard to this matter. We remain, yours respectfully,

The Columbus Watch Co., C. L. POST.

P. S.—You also state the amount of capital invested is \$150,000; it is more than double that amount at the present time.

Columbus, O., February 8, 1888.

C. W. Co., P.

KIND WORDS.

Mr. L. C. Bailey, Calais, Me., writes: "It is the best journal in the trade."

Mr. Carl M. Cook, Hammononton, N. J., writes: "Please send THE JEWELERS' CIRCULAR another year. I find it a great help to me in my business."

THE JEWELERS' CIRCULAR for February continues the fine series of monograms which has been running for several months. This issue runs from I. M. to J. K. and within these bounds are 96 monograms. One of the leading articles is on magnetism in watches, an essay read before the Chicago Electric Club. The series of articles by Mr. Crossman, on the History of Watch and Clock Making in America, takes in the Fitchburg and Columbus Watch Companies.—*Waltham Free Press.*

Mr. W. J. Irvine, La Crosse, Wis., writes: "This is my tenth year with the good old CIRCULAR, and I cannot spare it."

Mr. J. R. Weber, Orbisonia, Pa., writes: "I can't get along without THE CIRCULAR."

Mr. J. R. Staley, Pittston, Pa., writes: "I think I could not afford to do without THE CIRCULAR."

Mr. C. A. Miller, Bellefontaine, O., writes: "I would not be without it for twice its cost."

Mr. H. Dusenberry, Middletown, N. Y., writes: "I consider THE CIRCULAR the best trade paper published."

Mr. F. M. Bradley, Mobile, Ala., writes: "I have taken it too long to stop now."

Messrs. F. F. Barss & Son, Placerville, Cal., write: "May you still keep on with the good work."



The trade during the past month has, of course, been light. I say "of course," because with the advent of the Lenten season there is always a peculiar dullness to be noticed in the Boston market, a condition of things that is not slow to make itself felt, reactively, in all the other and smaller centers of the New England trade. I don't know how much this after-Christmas dullness affects the section further West, but should presume that the same cause would there work toward similar results, in spite of the fact that this cradle city of the Puritans boasts of a religious fervor that equals, if not rivals, its "culture." Our society, in its highest tone and the full heyday of its winter holiday carnival of balls, receptions and marriages, never knows the wild abandon and extravagances of art and fashion which sway Gotham's upper circle; and judging by what I saw during my

recent New Year's visit to the Hudson metropolis, I seriously doubt if its people ever recover from the giddiness of their social revolvings sufficiently to realize the quaint and solemn stillness, half of fatigue and half of devoutness, which steals over us forty days—and forty nights, too, just before the opening of the spring and summer seasons.

All these social localisms naturally stamp themselves upon our commercial individuality, and nowhere is the impression deeper made than in those lines, as in the case of jewelry, that cater with special effort to the luxurious and fashionable. True, the average workman, clerk or mechanic wots not of the season, if he be in search of an engagement ring, and there is always and at all times the regular demand for birthday gifts to be supplied; but, taken all in all, the dealer knows that outside of these his trade is practically dead, and will remain so until the Easter lilies have made their annual re-appearance. Consequently he is, both severally and collectively speaking, taking account of stock.

All this, of course, refers more particularly to the retailers. The wholesalers have nothing to kick about, as far as I can discover, while what few manufacturers there are located here have all they can do to fill their orders on the light and trifling novelties for the spring market. And, by the way, in spite of the fact that your really and truly experienced jeweler is the last man in the commercial world to let the chance of business "like sunbeams pass him by," yet there is, I find, a growing disposition on his part to raise a protest against the arbitrary exactions, and comparatively narrow profit margin that regularly characterize this short and scattered and unsubstantial "spring boom." One of the trading manufacturers said to me only the other day that it would do little harm, if any, to the trade at large if their boom didn't boom at all. "The fall trade," said he, "begins as early as July, and in the long run, take it the year through, it will be found that just so many goods are bound to be sold anyway, sooner or later. The doing away of the spring business would tend to concentrate the activity into the later run." Whether or not this is a wise view of the matter I do not presume to judge. Of course, any retailer is at perfect liberty to try the experiment if he chooses. Should his failure be subsequently chronicled, of necessity will all mourn for him as one who died a martyr to the cause of investigation. The majority of our dealers, are, I am sure, content to "let well enough alone," and allow nature to take her course.

The recent action of the watch case manufacturers in reducing prices 20 per cent. has introduced a very disturbing element into the local market. A serious feeling of uncertainty is being manifested, and this unsettled state will undoubtedly continue until it is known definitely whether or not the movement makers will follow the example of the case makers. The rule adopted by the case men at their last meeting, to the effect that no movements shall be sold without cases, will do much to injure several of the smaller case manufacturers who have been in the habit of selling at retail.

Perhaps the one thing during the whole month that has occasioned the most widespread comment, if not surprise, was the announcement made a couple of weeks since by Norton Bros. & Butters, that they contemplated removing their entire establishment on May 1 to Kansas City. Mr. Norton told me a day or two ago that the firm had already engaged rooms in the new American Bank Building, at the corner of Delaware and 8th streets, in that city. No one who has visited the place will need to be told anything of its bustling and energetic enterprise, or of the unsurpassed advantage of the location that has been chosen by the removing concern. The first floor of the building, in architectural proportions and finish, is one of the finest ornaments in the city. "We have made arrangements," said one of them, "to exchange the safes we own here for new ones at Kansas City, so that all we will need to do will be to move the small quantity of watches we shall then have on hand. All the rest of our stock will by that time have been largely disposed of." When I asked him why the firm thought it best to pull up stakes, he laughed

and answered: "Our reason? Well, it's easily told. There are not to-day more than 50 additional jewelry houses in New England over the number there were in existence 50 years ago. Many of the largest and longest established firms, too, are making less profits and doing less business to-day than for 20 years back. Almost all the trade, as soon as you go 50 miles west of Boston, falls into the gaping pocket of New York with a certainty and precision that would open the eyes of an expert pool player in jealous wonder. All these facts demonstrate that not only is the New England field a narrow one, but that it is also growing narrower yearly. In the West, however, there is a large and growing trade. In every town on the 20,000 miles of railroad that is tributary to Kansas City, some young man from the East has started or is starting in the jewelry business, and there are a sufficient number of wholesale houses now in Kansas City to make it a jobbing center. Woodstock, Barger & Hoeffler are going to open there on March 1, and there are already there a few others well located. Believing, then, that there is a large retail market that will give Kansas City its preference in the matter of getting supplies, we are going to try the experiment and make a bid for part of its patronage, at least."

These sentiments cannot help but grate harshly upon the sensitive ears of the true New Englander. Yet, however severe and pessimistic may be the criticism of the firm who are about to leave us, of our local range of commercial possibility, I am sure, from the conversation I have held with many of the other dealers, that a most cordial "hail and farewell" will be given the enterprising seekers after pastures new, and that no one will rejoice with them more heartily in the looked-for hour of their prosperity than their old associates in and around Boston.

Politics are beginning to sizzle, and every one is trying to show how little he knows about the tariff. LEON.

Boston, February 17, 1888.

The National Association of Jobbers in American Watches.



THE THIRD Annual Meeting of the National Association of Jobbers in American Watches was held in this city on February 14 and 15. The Mutual Life Insurance Co. very courteously placed their directors' room at the disposal of the Association, and the spacious and elegant room was filled with representative jobbers from all parts of the country.

The meeting was called to order by President Hayes, who greeted the members in a short speech, expressing his appreciation of the uniform courtesy which had been shown him during his 3 terms of office, and the pleasure he had derived from the acquaintance and association of so many gentlemen engaged in the watch trade.

In closing, he expressed his hope that the Association would continue to prosper, and his regret that his retirement from business would prevent his continuing a member.

He then resigned his office and Vice-President Hahn took the chair.

The thanks of the Association were then tendered to the retiring President by a unanimous vote, and it was agreed that appropriate resolutions be engrossed and presented to him.

The roll was then called, showing 114 members represented in person and 62 proxies were filed with the Secretary, so that every section of the country was well represented. It was voted to dispense with the reading of the Minutes, and the report of the Secretary and Treasurer was read, showing a present membership of 239 as against 262 last year, and a balance on the right side in the Treasury. It was voted to receive these reports and place them on file.

The Chairman of the Sub-Committee then read a paper, giving an

outline of the work of the Committee during the past year, which it was voted to lay on the table.

New business was then in order and a number of resolutions amending the rules were read, and the meeting went into committee of the whole to consider them. After hearing the resolutions, some changes were made in them, and it was then moved that a committee be appointed to confer with the manufacturers and ascertain their views on the matter, and any other suggestions that they may have to make to the meeting.

Pending this motion it was agreed to hear the result of a conference which had taken place on the previous day between the manufacturers and an informal committee of jobbers. Mr. Young reported for that committee that the manufacturers had decided to maintain their Association and to co-operate in the same manner as before, and are unwilling to co-operate as individuals.

They also decided that no manufacturer should be allowed to co-operate with the Jobbers' Association unless he co-operates with them. They are willing to allow the jobber a fair profit and to meet all outside competition.

It was then voted to appoint the Conference Committee, and the following gentleman were named by the chair: Mr. A. G. Schwab, of Cincinnati; Mr. S. Oppenheimer and Mr. D. Untermeyer, of New York; Mr. L. W. Flershem, of Chicago; Mr. Aug. Kurtzeborn, of St. Louis; Mr. A. Paul, of Boston; Mr. H. O. Hurlburt, of Philadelphia.

The committee then retired and the meeting adjourned to 3 o'clock.

The meeting was called to order again at 3.25, and the committee not being ready to report resolutions were in order, and the following were passed:

Whereas, A number of dealers have made a practice of sending out price lists, catalogues and circulars, and in other ways advertising American watches for sale to the consumer at regular trade prices or at a very slight advance upon the same; be it therefore

Resolved, That the Secretary shall send the name of any dealer he discovers advertising the sale of American watches to the consumer at less than 25 per cent. in advance of the net cash price to the retailer to each member, and after receiving such notice it shall be deemed a violation of contract with penalty of expulsion to sell or furnish any American watches to said dealers, until notice is received from the Secretary that they have given him such assurances as have satisfied him that they will not offend in future.

Resolved, That any jobber who has not purchased \$5,000 net of combination goods during the past year, shall be dropped from the list and cease to be a member of this Association.

The Conference Committee having sent word that they would not be able to report until the next day, the meeting adjourned until the 15th, at 10 A. M.

SECOND DAY.

The meeting was called to order at 11 A. M., Vice-president Hahn in the chair.

The Conference Committee presented their report in the shape of a communication from the manufacturers accepting the resolutions which had been sent by the meeting with some alterations and proposing the following in addition:

Resolved, that no member of the Jobbers' Association shall be allowed to sell any American movements without cases; *i. e.* that at least as many cases as movements must be sold on each bill.

Resolved, That the List of Special Retailers be abolished, the intention of manufacturers being to market their products through members of the jobbers' Association only. This communication was taken up by sections and with some slight alterations was adopted.

Meeting then adjourned till 2.30.

The members were called to order again at 2.50 and after disposing of some routine business the election of officers was taken up and the following were chosen unanimously: President, Mr. H. F. Hahn, of Chicago; Vice-president, Mr. Ira Goddard, of New York;

Secretary and Treasurer, Mr. J. H. Noyes, of New York; Members of Sub-committee, Messrs. David Keller and E. S. Smith, of New York; Mr. L. W. Flershem, of Chicago.

After passing a resolution of thanks to the Insurance company for their kindness in donating the use of the room, the meeting adjourned to the third Tuesday in January, 1889.

The meeting was harmonious, the action taken being by large majorities in every instance.

The existence of opposition was deprecated, but it was generally agreed that while taking no aggressive action, the Association would heartily support the manufacturers in their efforts to meet competition, and would firmly oppose any attacks upon themselves or any of the manufacturers co-operating with them.



LONDON, February 9, 1888.

It is always encouraging whenever a good commencement can be made, whatever the undertaking may be, and manufacturers and traders are alike glad when they can commence the year well. I have no hesitation in saying that the first month of this year has been a good commencement. Of course, there are many who not only will not admit this, but who positively deny it. My enquiries, however, confirm the opinion I had formed from observation, and now that stock taking is over and travelers are again on the road seeking orders, and attention is being paid to the execution of orders already received by post, the manufacturers in our trade are becoming fairly busy. It is already to be noticed that the factors, or wholesale dealers, (jobbers you call them, I believe,) are buying more freely than they have done lately. As these gentlemen are in a much better position to feel the pulses of retailers than manufacturers are, the fact that they are buying extensively may be taken as an indication of coming good trade. We are so much in the habit of comparing one month with another that we are apt to lose sight of the fact that the month of January last year was a very exceptional one. The whole year 1887 was an unusual one for the jewelry trade in many respects, but in none more so than in the abnormal excitement manifested at its commencement in the production of royal jubilee memorials. This made the month of January, in that year, exceptional in its productions to a degree that is not likely to be soon repeated. January of this year, therefore, suffers by the comparison. There is no doubt much injury was done to what might have been a better class trade during the past year, by the rashness with which many speculative makers discounted the jubilee celebrations. They flooded the market early with attractive cheap novelties in the guise of jubilee mementoes, thus interfering greatly with the sales of ordinary stock. The severe competition in the sale of mementoes of all kinds kept down prices and greatly reduced the retailers' percentage of profits, and as the articles principally disposed of were less costly than the average, the gross takings were less also, thus further reducing the gain to the dealers. I am referring to the effect of jubilee jewelry on the retail trade. Certain manufacturers, however, were very fortunate—particularly die sinkers and manufacturers of medals. The value of these medals individually was trifling, but the total number required was fabulous. I have not seen any estimate of the number of commemorative pieces turned out, but I expect if it was ascertained, it would seem to be incredible. Some idea may be formed of the number required when it is remembered that every city, town or village, not only of the United Kingdom, but of almost every colony, had a distinctive medal of its own for distribution

amongst all its children. This was the cheaper work, but more expensive orders also came in in abundance for chains and other insignia of office for chief magistrates and other dignitaries of cities and towns, where the jubilee year was made the occasion for securing these decorations where they had them not, or for substituting better ones where they had them already. All this gave the trade of 1887, and particularly of January, 1887, an unusual impetus, so that the past January being minus any such excitement, cannot fairly be judged by comparison with it. Our industries are still considerably influenced by a fashion that had a depressing effect throughout the whole of 1887, namely, that of wearing very little jewelry out of doors. There is, however good reason to hope that the present year will witness an improvement in this respect. It is anticipated that the recent change in favor of wearing jewelry at morning ceremonies and out of doors generally will become more pronounced, and that the efforts made last year by some of our jewelry manufacturers to promote that object will succeed. Indeed, the change is already noticeable in some of the picture galleries and other morning assemblies, and must be a pleasing change to the wearers themselves, as well as a beneficial one to the producing industries from the fashion of last year, when little or no jewelry was perceptible on such occasions.

The trade in fancy goods during the past weeks has been dull—not only dull by comparison with the corresponding weeks of last year, but by comparison with the same period in previous years. Many of the chief industries of the country are exhibiting signs of increased animation; there is a general hope and belief that the business in our fancy departments will yet be good.

There is still a demand for silver goods, and attention continues to be paid to the production of novelties in sterling silver, as also in plated goods. There is a continuance of the demand for smaller articles for table purposes. Small salvers, dishes, fruit trays, cruets, etc., etc. These are still much preferred to the massive goods that used to prevail. It would appear that the taste for china and pottery ware generally, mounted for table use, is changing, and the demand falling off. There are further novelties in glass goods for the same purposes, including some very elegant designs in richly cut glass liqueurs and spirit sets, mounted in silver, plain and engraved. I have just seen some very handy as well as ornamental spirit sets manufactured by Grinsell & Son, of Charterhouse street, London, and Birmingham. The frame, which holds the bottles securely without concealing them, and which admits of being readily opened, closed and carried, is an ingenious contrivance and should command a sale. Some very good specimens of English pressed (or moulded) glass mounted for domestic purposes in the same manner as cut glass are now in the market. This pressed glass is much more frequently used than hitherto for better purposes. Of course, the difference in price is the great recommendation, but although I am a great admirer of Stourbridge cut glass—and what glass is richer in purity or brilliancy than that of Thomas Webb & Sons, of Stourbridge?—I have recently seen and admired some really pretty designs in biscuit boxes, marmalade jars and butter coolers of pressed glass, made by Greener & Co., of Sunderland, and mounted in silver by Birmingham and Sheffield firms. I will not say the moulded glass looks as well as the cut glass (there are some patterns made in both), but I certainly prefer the pressed glass articles with the silver mounts to the cut glass goods with plated mountings.

The gilding and plating industries have been very quiet. Competition has done much harm in this as in other branches—unhealthy competition, I mean—that of firms who have been determined to take orders at any price almost, so that others should not have them. When will traders learn the folly of this? It is said that some firms are soliciting orders from jewelers, and are offering to do gilding and silvering at ridiculous prices. From some of the prices named to me (which your readers would not understand without seeing the articles) I should imagine the gilding and silvering would be ridiculous also. If, however, there is a demand for these goods, they will always be

forthcoming. For the credit of the trade I hope the goods are not manufactured with a view to create a demand.

I mentioned in my last the practice of stationers and others selling various silver articles to the prejudice of regular traders. Recent prosecutions “for selling plate without a license” have, to some extent, checked the evil, though the parties are now retaliating by increasing their stock of silver goods, but confining their selection to articles weighing less than the prescribed five pennyweights and thus avoiding any breach of the law. I hear, also, that wholesale dealers (jobbers) in stationers’ sundries are adding these light silver articles to their regular stocks. If we are obliged to have thrust under our notice at our railway book stalls the *gift* of a silver watch to every purchaser of a particular 10/6 volume, I hope we are not going to be importuned to purchase silver toothpicks or ear rings every time we buy a packet of envelopes or a bottle of ink. The new Jewelers’ and Silversmiths’ Association will do well to investigate this matter, and if they do they will probably devise some means of confining the trade to its legitimate members. I may mention here that this association—a Birmingham one—held an important meeting on January 17. A report of the work done since the association was formed was submitted. It was stated that a recent prosecution under the new Merchandise Marks Act had been watched on behalf of members of the association by the Secretary, and that it had been decided that in all cases of bankruptcy in the trade, a meeting of members interested as creditors would be called. An arrangement was also made for a series of lectures on subjects interesting to the trade. It will be seen that the association is an active one and should have a successful career. VIGILANT.

BIRMINGHAM, February 9, 1888.

The Merchandise Marks Act, passed in last session of Parliament, is slowly working a great change in the jewelry as well as all other trades. It has been a custom of the trade to mark chains 9 karat and 15 karat and to guarantee them eight karat and 13 karat respectively, but under this new law it is illegal to mark goods, cards or labels attached to goods unless the said goods are of the quality marked.

As a consequence, makers have left off marking chains at all unless of full 9 and 15 karat gold; this, no doubt, will ultimately cause all chains to be either full 9, 15 and 18 karat, or a very low quality of gold indeed.

Previously, nearly all cards which had silver goods on them were printed “sterling silver,” but this is now being altered, and in most cases the word “silver” only is put on the card.

In the watch trade it is creating quite a revolution. It has been the custom of Swiss watchmakers to have their cases Hall marked here, and usually these watches have been retailed here as of English manufacture. Under this new law the Swiss can have their cases marked here, but a totally different mark is used to that for English cases, and it is also distinctly shown that they are of Swiss manufacture.

A local agent for a Swiss house showed me some watches yesterday which had been sent from Switzerland, with the words “guaranteed 800 silver” marked on the cases; this was objected to by the Custom House officers and the watches were returned to have it taken out, but if the maker wished he could put it in French.

At the present time there are over 1,000 watches in the Dover Custom House which have been stopped, because the movements have “fast” and “slow” engraved by the regulators. The Custom House officers contend this should be in French, as the goods come from a country where French is spoken.

Although the act has been worded as clearly as possible, there are many points to be settled by the judges; for instance, in many common silver ladies’ Alberts, the tassel and all the chain is of German manufacture, this being cut up here into the necessary lengths, and

mounts, slides, etc., added; now, the question is, is this of English or German manufacture?

Again, who is to determine what the word "silver" means? Great quantities of common goods are made here of half silver and half white metal and sold as silver, and the same remarks will apply to "real gold." How common can it be and still be called gold?

I saw some very pretty mirrors and photo frames a few days since that I have no doubt will be bought freely by those jewelers who keep artistic ornaments in addition to their stock of jewelry. These are of various very artistic shapes, filled with Venetian or Florentine mosaic, with occasionally three or four cameos introduced. The variety of this mosaic work is endless, and is now made so cheaply that a well-made English brass carte-de-visite size photo frame filled with the mosaic, can be sold by the retailer for ten shillings.

The run of mosaic work for brooches still continues as brisk as ever. The makers have now added to their varied assortment of designs, the various national emblems worked up in mosaic. As at the present time there is a great political agitation going on in Ireland the shamrock leaf sells freely, and being inlaid in the national colors the effect on a white ground is very pretty.

The fashion for wearing waist buckles, I spoke of a few months ago is on the increase, and they are now selling freely in London, but it has not spread to the provinces yet.

The large number of failures during last year has made it very difficult for many small manufacturers to carry on.

A few weeks since W. & J. Randle, of Vittoria street, once the largest stud and link people in the trade, sold their stock by auction and closed their premises. Last week W. Taylor & Son, Gt Hampton street, a business established over 50 years, called their creditors together to arrange for a composition, and I have no doubt that before I write you again there will be another maker, formerly in a large way of business, who will have to do the same.

SOLITAIRE.



The jewelry trade of this city is suffering from reaction after the best holiday business that the trade has known for years. At present business is stagnant and both retailers and jobbers are complaining bitterly. The retailers are doing scarcely anything and many of them are improving the time of rest by taking stock and getting ready for the lively times that are expected during the coming summer, when Cincinnati celebrates her centennial. Great preparations are being made for that event and it is expected that fully 1,000,000 persons will visit the city during the four months that the Exposition will be open. Of course, the jewelers expect to get their full share of business and are making their arrangements accordingly. This is thrown in as a sort of a tip for outside jobbers who may desire to send their men here.

Mr. Samuel B. Duncan, late of Edward Todd & Co., of New York, has gone into the wholesale gold pen business at 20 and 21 Emery Arcade.

Mr. Augustus Veith, of Oppenheimer Bros. & Veith, is in this city with his old smile and a big line of diamonds.

Mr. Eshott, the enterprising 5th street jeweler, has a sign which is an attractive novelty. It is a large pavement clock, the hands of which revolve through the force of the wind. It is very confusing

to the many people who crowd around it and who cannot understand what causes the hands to revolve at such a lively rate.

Mr. August Tephart, who for five years managed the San Francisco branch of the Dueber Company, has returned to Cincinnati and is now with A. & J. Plaut, 13 arcade.

Mr. Alfred Kettle and "Jimmie" Lake of the American Watch Company placed a few orders in the city last week.

Mr. Charles Offerman, with his chain goods spent Mardi Gras night in the Queen city and nearly exhausted himself in his efforts to take in all the balls. He sells goods if any one can, but complains that trade is dull.

Charles E. Dorr of the Gorham Manufacturing Company, has lately done the town.

Colonel A. Steinau is the busiest jeweler in town. He is running two stores and is now preparing to open a third, with watches and diamonds as a specialty, next month. He expects to get his full share of the centennial "graft," but says that trade is wonderfully dull just now. Last year business footed up over the average, however, and he or none of the Cincinnati jewelers are complaining very bitterly.

Herman Duhme, Jr., of H. Duhme & Co., is a great lover of fine horses, and has quite a big stable on his farm near the city.

Major Iaboiteau, also with Duhme, is the oldest jeweler in Ohio, boasting that he has been in the business nearly seventy years. He still maintains his wonderful good nature and is one of the popular men of the trade.

The prize silver cup, the trophy of the Western Canoe Association, is now attracting considerable favorable comment. This cup was made at Duhme & Co.'s from designs by their artist, Charles F. Goetheim. Competitive designs were submitted by the Gorham Manufacturing Co., Tiffany, of New York, and Duhme & Co., the latter house carrying off the prize through the superior design of Artist Goetheim. The trophy is to be sailed for annually at the July meetings. The cup is valued at \$400. It is fourteen inches high and rests upon a base of rocks. The body is of oxidized silver and so finished as to represent water. While above this is a scene representing a boat race, the boating house or goal in the distance. Around this scene are grouped various aquatic plants, while entwined about the rim of the cup is a rope which is attached to the canoe paddles which form the handles. Surrounding the picture are three smaller scenes of canoes with sails, a canoe or hunters' camp, and a solitary Indian paddling his own canoe. On the body is a scroll for the inscription, and beneath the stanza, "Palmarum qui meruit ferat." There are to be three handles, and between each is a scroll, each having a Latin motto, together with the flag of the club.

Mr. John J. Jonas a well known member of the trade has been mysteriously from his home in this city, for a week or more. Neither his family nor his business associates can find any clue to his whereabouts.

E. M.

The New York Jewelers' Board of Trade.



THE THIRD annual meeting of the Board of Trade, was held at the offices of the Board, 41 Maiden Lane, on January 31st. The attendance was very satisfactory and showed that the members are fully aware that their strength and success depend upon unity and zeal. The Board of Trade has steadily increased in usefulness as well as in the number of its membership, and the many cases of claims which were at first thought hopelessly incollectible, that were collected by the Board, either in full or in large part, has shown that this organization is doing plenty of good work. In the case of one

failure particularly, that occurred not long ago, the creditors received their claims in full only through the work of the Board, while shortly after the failure many certainly expected to lose the full amount of their claims.

The report of the secretary, Mr. Herbert M. Condit, was then read and approved. It shows a loss in membership during the year by resignation and dropped from membership of 15 members, and a gain of 21 new members. The total membership on January 1st, 1888, was stated to be 86. A record of the financial standing of 7,115 dealers is now in the hands of the secretary, against 5,338 last year, and 8,213 trade reports have been made to members, besides about 9,000 circulars have been sent out. The delinquent system was stated to be in a fair way towards success, but the secretary desired more earnest co-operation from the members. The "Bureau of Collections" department showed excellent results and is now reduced to a perfect system. The "Failure and Assignment" department showed that there were held 24 creditors' meetings during the year. There were 36 failure cases in hand, of which 9 were shown to be settled by this department for an average of 40 per cent. on the total amount of the claims. Of the remaining cases, partial dividends, amounting to \$3,135.79, were shown to have been paid.

The election of officers for the ensuing year resulted as follows: President, Frank H. Richardson; first vice-president, David Keller; second vice-president, Gurdon W. Hull; treasurer, William Smith; secretary, Herbert M. Condit; directors, William Bardel, of Heller & Bardel; John C. Downing, of Downing & Keller; Gurdon W. Hull, of Simpson, Hall, Miller & Co.; David Keller, of Pforzheimer Keller & Co.; F. Kroeber, of F. Kroeber Clock Company; Max J. Lissauer, of Lissauer & Sondheim; S. F. Myers, of S. F. Myers & Co.; August Oppenheimer, of Oppenheimer Brothers & Veith; Frank H. Richardson, of Enos Richardson & Co.; Edmund J. Schofield, of Elgin National Watch Company; Horace D. Sherrill, of Sinnock & Sherrill; William Smith, of William Smith & Co.; Leopold Stern, of Stern Brothers & Co.

The report of the Finance Committee was read and approved. The committee made several recommendations which were acted upon at once. The matter of raising the annual dues from \$50 to \$75 was carried unanimously and that of appointing an attorney for the Board was carried after some discussion. The directors were authorized and directed to appoint an attorney who is to give his entire services to the members of the Board, and his compensation to be such as he may receive from the business thus brought to him. He is to have his office either in the rooms of the Board or somewhere near at hand.

The report of this committee also duly credited the secretary for his excellent work done during the past year and also for the substantial progress of the work carried on under his supervision. The work of the collection department, of which the secretary has the charge, was reviewed and also received the committee's commendation.

The Treasurer's report showed a very satisfactory condition of the Board's finances, and very efficient work on the part of the treasurer.

At a special meeting of the Directors, held on February 9th, the committees for the ensuing year were chosen as follows: financial committee, Messrs. Leopold Stern, S. F. Myers and August Oppenheimer; arbitration committee, Messrs. J. C. Downing, Edmund J. Schofield, David Keller, Horace D. Sherrill and Gurdon W. Hull; membership committee, Messrs. Max J. Lissauer, William Bardell and F. Kroeber.

Mr. D. L. Van Moppes, 2 John Street, and Messrs. Henry E. Oppenheimer & Co., were elected to membership in the Board at a special meeting of the Directors.



This is the "off season" in the south, and is about as dull a month as we have had for trade. Our own city is full of life and is marching right on despite rainy weather and off seasons. The new census has just been taken of Atlanta, and our population has grown wonderfully in the last year. She now has more than seventy thousand inhabitants and the future seems brighter than it has for a long time.

The fact that a half a million dollar Union Passenger depot is to be built here, and that large government buildings, both state and national, will soon be erected, all show what may be expected in the coming years. Atlanta has what no other southern city boasts of—well paved streets. All of the principal streets are now paved with the very best Belgian block and many other improvements are now being made. One thing may be said of Atlanta and that is, that all of our leading jewelry houses, both wholesale and retail, are situated on the best and most popular streets and are the most attractive stores on them.

As to the jewelry trade this much we may say, that it is quiet, yet in keeping with the season. Our wholesale merchants have been exerting themselves with great energy and I presume have met with their usual success. The retail men have had some very nice sales, yet not so flattering as last month. As spring comes on their trade will pick up and a fine business will be done.

Mr. A. L. Dalkin has been spending the winter in Florida. He has returned and is now hard at work again.

A new jewelry house will soon be opened in Rome, Ga. It is to be conducted by experienced and moneyed parties, yet your correspondent has not the names of all the parties interested.

Mr. G. C. Burman, of this city, has gone out of the jewelry business and has formed a partnership with a large tobacco dealer.

A. G. Maumenee, on Marietta street, is doing a fine business. He has just lately opened his house and is meeting with great success.

Mr. Er. Lamshe, for many years a leader of the jewelry business of this city, has about retired and will content himself in his old age on the profits of a well-spent life.

Mr. L. M. Cox, on Whitehall street, is a young jeweler of much ability and will some day be heard from. His style and grade of work is very fine.

Rodgers & Johnson, on Peachtree street, have been doing a large and satisfactory trade. They do exclusively a wholesale business and have a fine trade.

Another old and reliable wholesale and retail house is that of S. Maier & Co., on Marietta street. Their elegant rooms and busy force show conclusively that a large and increasing trade is handled.

E. W. Blue, since he has moved to his new store on Peachtree street, has been doing a very satisfactory business.

One of the largest and best jewelers in Montgomery, Ala., is Mr. Otto Stoelker. His trade has been in keeping with the times. He has just returned from the East, where he had been in the interest of his house.

J. L. Schweiger is another of Alabama's large jewelry merchants. He is located in the thriving and growing city of Selma, and numbers his friends by the score. Messrs. Allen & McOsker, at Rome, Ga., will soon have a competition in the way of a new house that is to be established by some northern gentlemen. The field there is large enough for several houses and we predict that all will succeed.

T. J. K.



The following named dealers were noticed in town during last month: Chas. A. Scudder, Athens, Ga.; W. H. Hennegan, D. Oppenheimer, Baltimore, Md.; P. E. Wirt, Bloomsburg, Pa.; G. H. Richards, Jr., A. Paul, J. P. Bachelder, C. F. Morrill, Boston, Mass.; W. F. King, F. M. Inglehart, Buffalo, N. Y.; H. Hallenbeck, Catskill, N. Y.; M. N. Burchard, C. K. Giles, L. Sonnenschein, Benj. Allen, L. Flershem, S. Stein, Chicago, Ill.; A. G. Schwab, J. Morgan, Cincinnati, O.; R. E. Burdick, L. M. Sigler, M. Jacobs, Cleveland, O.; D. Gruen, of the Columbus Watch Co., Columbus, O.; T. G. Hawkes, Corning, N. Y.; James Fricker, Danville, Va.; J. R. Burt, Detroit, Mich.; A. Levy, Hamilton, Ontario; H. Kohn, L. Gundlach, Hartford, Conn.; W. B. Musser, Lancaster, Pa.; C. F. Segsworth, H. Benham, M. C. Ellis, Toronto, Ontario; S. Tappan, D. T. Bouticou, Troy, N. Y.; J. Wineburgh, Q. McAdam, Utica, N. Y.; B. L. Bogle, White River Junction, Vt.; E. Lawson, Lowell, Mass.; J. H. Jones, Montreal, Quebec; E. Rowe, New Haven, Conn.

—The Rockford Watch Company have decided to continue to sell their product to legitimate dealers only.

—L. Hammel & Co., were granted a certificate of registration of their trade-mark, "A representation of a star," for mainsprings, on February 21st. They have used it since September 1st, 1887.

—"Look out for the 'Eclipse.'" These are the words of a very startling advertisement to be found on another page of this issue. We don't know why this warning is given, but we are quite sure it is necessary, for the authors of it have used a whole page to print it on. Look out for it then, be it an eclipse of the moon, sun, or only the announcement of a new style of watch, clock, ring, pin, chain, or what not, but whatever it is, look out for it!

—Mr. John B. Yates, lately with the Manhattan Watch Co., has been appointed the general selling agent of the Trenton Watch Company. Mr. Yates is well known throughout the country to nearly the whole trade, having traveled through thirty-two states, and visited about ten thousand dealers during the past few years. He is a good salesman, a young man, and he sells a good watch, made by a young and enterprising company, and we wish him success. He has not yet secured an office in New York, but expects to early in March. His present address is post office box 1853, New York.

—Mr. L. P. Mendes, well known to the trade as a salesman for his brother, Mr. D. deSola Mendes, has been taken into partnership, and the firm name hereafter will be D. deSola Mendes & Co. The firm has recently largely increased its facilities for doing business by enlarging their factory, whereby they secure accommodations for an increased number of workmen. The firm does a large general repairing as well as manufacturing business. Their stone cutting department is entirely separate from the other factory, and they claim to do as fine work in diamond cutting as is done anywhere. They import the rough stones and add greatly to their value by the skillful manner in which they are prepared for the market.

—Mr. Edward J. Zahm, of Lancaster, Pa., died on February 16th, at the age of 57. As a jeweler he has long been known to a large part of the trade, and the business established by him was very successful owing to his good business ability. When he was fourteen he was apprenticed to his brother, H. L. Zahm, whose death a short time ago was noted in these columns. "Zahn's corner" is a noted place in Lancaster, established by these two brothers, and kept by both until 1870, when E. J. Zahm purchased his brothers interest and ran it alone. Mr. Zahm, socially and intellectually was widely known and respected, and had these qualities in an eminent degree. He leaves two sons, Ernest and Edward. Mr. Ernest Zahm is the proprietor of a jewelry manufacturing establishment, and Edward was associated with his father in the retail store.

Jacot & Son have an imposing array of musical boxes to show. During the past year their business has shown a large increase, owing to their persistent enterprise; and their stock has been kept unusually large. They intend to show a larger line than ever this coming season.

—An interesting case, involving the legality of contracts made by persons joining a "watch club," was decided last month in a Rhode Island court. It was an action by the agent of a Philadelphia watch club against a person who, on having drawn a watch after paying \$13 into the club, was dissatisfied with it. The defendant had offered to return the watch to the agent on condition of his receiving back his \$13, and his attorney held that this disposed of the action in trover. The agent had guaranteed that the watch was worth \$38, whereas the defendant was willing to return it for the smaller sum. The court decided in favor of the defendant, holding that the guarantee was not a proper one, in that it was simply the guarantee of an individual; and that had the defendant accepted it, an action could properly have been brought against him for a breach of contract.

—The most destructive fire that has occurred in Providence, R. I., for over ten years, was that of the 15th of last month. The Chase and Arnold building, a four-story brick structure on Eddy, Worcester and Fountain streets, containing the manufactories of several important jewelry firms was completely gutted, as were also other buildings in the vicinity. The total losses to all the burned out firms, including the jewelers, were put at \$470,000, while the insurance was not quite \$200,000. The fire was a fierce one, and called forth all the available fire extinguishing companies in the neighborhood, and also from towns near by. The thermometer was several degrees below zero, and the firemen went about covered with ice or dripping with water. The following named jewelry firms occupied shops or offices in the burned buildings, and saved nothing but the contents of their safes: Wm. H. Robinson & Co., W. A. Beatty & Co., W. J. Bradley & Co., James A. Charnley, Clark & Turner, F. J. Favro, W. S. Hough, Jr. & Co., John McAdam, N. L. Read & Co., H. H. White. The losses of these firms could not be ascertained, but the aggregate will be quite large. Each firm has some insurance, but in no case does it equal the amount of the estimated loss. Since the fire the firms mentioned have secured quarters elsewhere, and we hope in our next issue to note the progress they have made. There is enterprise in these firms, and a fire like this only makes an occasion to prove their mettle. They all have the sympathy and interest of THE CIRCULAR.

—If art can surpass nature, then the clock cases made by the Wm. L. Gilbert Clock Co. called "plastic marble," might be said to surpass in many ways, the real marble clock cases. The material of which these cases is made is black and takes and retains a high polish like onyx. It is cast in moulds and pressed in hydraulic presses and afterwards polished and finished either plain or with ornaments. The entire clock case is cast in one piece, and thus has this advantage over the genuine marble case, that it does not come apart through the action which heat or time produces upon the cement necessarily used in the latter. The polish taken by the new material is of a very lasting kind and the surface is made perfectly smooth and even. The company have so far put six good patterns of clocks in this material upon the market and they have received many commendations from those who have seen them. Some of the patterns are finished plain, some with gilt line ornamentations and others with real onyx of variegated colors inlaid in the plastic material. The effect of this latter style is very pleasing and is fully equal to anything of the kind in real marble clocks. In their advertisement in this issue are shown a few of the designs of these clocks to which we would call attention. Other designs are being begun at the factory, and will be placed on the market shortly. These clocks are much cheaper than imported marble clocks, and are the competitors in price of the iron clocks.

—The Fidelity Watch Case Company has been incorporated, to succeed to and enlarge the business formerly carried on by Mr. Charles Schwitter. Mr. Schwitter, Mr. A.G. Funck, and Mr. Eugene Martins are the incorporators, and the present capital is \$125,000.

—The thieves who robbed Wm. Baird's store in Brooklyn on November 25th, were captured recently. There were two of them, William Wright, alias Wilson, and Johnny Oliver, both notorious characters in the criminal records of New York.

—A large fire in St. Louis, on the 5th of February, damaged the stock of the Mermod & Jaccard Jewelry Company to the extent of about \$25,000, which was fully covered by insurance. The fire was a very fierce one, and threatened for a time the destruction of the entire stock, and also neighboring buildings, but the heroic and prompt work of the firemen prevented it spreading further.

—The Spencer Optical Manufacturing Company has received the certificate of award from the Committee of the American Exhibition at London, held during last year, for eye-glasses, opera, field and marine glasses, and for celluloid frames. This adds another to the many certificates which this company has received in all parts of the world, and the optical trade, as well as the Spencer company, can justly be proud of the honorable achievements of this American firm.

—The great fire in Pittsburgh, Pa., on the 29th of January, was quite disastrous to Heeren Bros. & Co. Their building was burned down completely, and their entire loss is now put at about \$60,000 to \$65,000, of which \$50,000 is covered by insurance. The greater portion of their valuable stock, however, was kept in safes and was saved from the fire. They have secured the large five-story building at No. 525 Wood street, which will be handsomely fitted up in modern style, and when this is put in order they will have one of the best equipped jewelry establishments in the country. Attention is called to their advertisement in this issue.

—A visit to the works of the Rogers & Hamilton Co., at Waterbury, Conn., is convincing proof of the wide-awake activity of that young house. Ponderous presses, mills and other modern machinery necessary for their business are at work, creating a noise sufficient to make a nervous person almost insane. Their factory is large, well lighted and pleasantly situated. They make the famous "Crown Hamilton" table ware which they claim is the best on earth; be that as it may, it is probably sufficient for us to say, that the representative of THE CIRCULAR saw some of their "Crown Hamilton" ware, in the solution, in their electro plating room, which, when taken out of the solution in which they were then receiving extra portion of plate on the exposed parts, showed conclusively that the extra silver which goes to make the excellence of the "Crown Hamilton" goods, was certainly where they claim to put it. This firm calls attention to their trade mark on page 62, also their advertisement of silver plated knives with steel blades on page 19.

—One might as well be out of the business entirely as to be out of the way where business is done. When the Bryant building was built not many years ago, at the corner of Liberty and Nassau streets, several jewelers took advantage of the accommodations offered in such a modern building by procuring offices there. The building is only one block from Maiden Lane, and the rear of it touches the rear ends of buildings on Maiden Lane, at the very center of the jewelry section. It would not seem, therefore, that this could be considered out of the way of the jewelry trade, and yet such is now considered to be the fact. And all the jewelers now located therein have secured quarters elsewhere. The Dueber Watch Case Mfg. Co. have removed to 178 Broadway, where they have elegantly fitted up the large front room on the first floor, formerly occupied by the Cheshire Watch Co. Mr. Charles Glatz, Ketcham & McDougall, Henry Carter and Mabie, Todd & Bard will shortly remove to the Denison Mfg. Co.'s building, 198 Broadway, where they have each secured convenient and suitable offices.

—The Non-Magnetic Watch Co., of America, have sent out an important notice to dealers in non-magnetic watches regarding infringements of Paillard's patent balance and spring, from which we make the following extracts: "The universal favor with which the Paillard non-magnetic watch has been received by the most renowned electricians and scientific horologists of the world, as well as by the public in general, has stimulated numerous attempts among watch manufacturers in both Switzerland and America to produce a watch that may be sold under the reputation made by watches containing the Paillard inventions. In Switzerland, where no patent laws exist, and where an infringer can infringe without fear of prosecution, bold attempts are about to be made to place watches upon the American market containing imitations of Paillard's inventions; these manufacturers hoping to pass these watches off under the guise of containing balances and hair springs made from alloys of Platina. This is an exceedingly safe game for Swiss manufacturers, as in case of suit for infringement the American dealer who handles the watch, and not the Swiss manufacturer, would have to stand the expenses of litigation and pay the consequent judgments for damages. After long continued and costly experiments, in which no less than fifteen thousand different alloys of metals have been compounded and tried, it has been found that permanent and accurate adjustments to temperatures can only be produced by balances and hair springs made from the alloys of palladium (which have been patented by Mr. Paillard), and be exempt from magnetic influences." "We are the pioneers in the non-magnetic watch field, and shall always endeavor to give the best watch in the market for the money. We therefore feel justified in claiming a fair share of your patronage and the co-operation of dealers to aid us in preventing the illegal pirating of our inventions, and we beg to hereby notify the trade that we shall vigorously prosecute all infringers of our patents as well as dealers who persist in handling watches which infringe upon our rights."

—Waltham non-magnetic watches recently had the experience of standing uninfluenced in the presence of the most powerful magnet in the world. Major W. R. King, of the United States corps of engineers, stationed at Willett's Point, L. I., not long ago conceived the idea of constructing a powerful magnet out of two large cannon which were on the reservation. He did this by winding a lot of submarine cable about the upper part of the guns, the length of the cable used being about eight miles. The power of the magnet thus created was tremendous, requiring a force of 25,000 pounds to pull off the armature of the guns. Mr. H. E. Duncan, one of the American Waltham Watch Co.'s experts, took several of the non-magnetic watches made by his company to a series of tests to be made with the magnet in the interests of science. Ordinary watches were simply ruined at a distance of three feet from the magnet, while the watch he used was not in the least affected. It was thought by some of the experts present that perhaps the steel parts of the watch might have become affected so as to influence the working of the watch, but no such influence could be detected and the watch did not vary the one-hundredth of a second during the ten minutes it was held near the magnet. Other experiments were made to demonstrate the power of the magnet. An iron crowbar, when put on the magnet, required the united strength of four men to pull it off. An amusing experiment was made with a sledgehammer. When one tried to wield it in a direction opposite to the magnet he felt as though he were trying to hit a blow with a long feather in a gale of wind. There is nothing in the world that could take the conceit out of a strong man so much as this simple experiment. Another amazing test was made with a number of carpenter's spikes. A spike was put lengthwise on the end of the magnet, then another spike was attached to the first and so on until a line of them stood straight out from the magnet at least four feet in length. Aside from their interest in science the experiments were so novel and startling that they were entertaining even to those who were not interested in the wonderful developments of electricity.

—The Denison Mfg. Co. are rearranging their building, No. 198 Broadway, and are improving the show room.

—Irwin & Co., manufacturers of gold and silver cane-heads, umbrella and whip mountings, etc., have removed to 79 and 81 Duane street.

—Mr. A. L. Hosmer, of Lockport, N. Y., writes to King & Eisele: "I have repeatedly bought your 'snaps' and think they are great bargains."

—Mr. F. H. La Pierre, the successor of Westen & Co., will continue at the same place, 18 East Fourteenth street. His line is sterling silver novelties of every description.

—S. F. Myers & Co. are making active preparations for the spring trade. Mr. S. F. Myers will shortly return from a three weeks vacation in Florida. Three of the firm travelers, Messrs. W. T. Holkins, M. S. Weand and James S. Knowles have already arranged their traveling paraphernalia and will soon be out in their respective territories showing goods.

—The office of the Waterbury Watch Co., Liberty street, is a busy place, everybody is busy, and about the busiest person of all is the young man having charge of the shipping department. Express packages piled up in one place, and mail packages in another, gives it somewhat the appearance of a post office and express office combined. Evidently the "Waterbury watch" is a success.

The following dealers returned from Europe during January: Messrs. Goldsmith & Horwitz, representatives of Stern Bros. & Co.; Mr. T. Le Boutillier; Mr. Jos. Fahys, Mr. D. De Sola Mendes, Mr. C. C. Camerden, of Camerden & Foster; Mr. H. M. Oppenheimer, of Oppenheimer Bros. & Veith; Mr. F. H. Mulford, of Mulford & Bonnet; Mr. E. Glaenger, Mr. Sol. Kaiser, of L. Strasburger & Co. and Mr. Louis Fox.

—At the annual meeting of the stockholders of the Illinois Watch Co., held at Springfield, on Tuesday, February 21, the following named gentlemen were elected directors for the ensuing year: Jacob Bunn, John W. Bunn, Henry Bunn, B. H. Ferguson, Geo. A. Bates, T. C. Henckle, Jacob Bunn, Jr. At a subsequent meeting the following officers were elected: President, Jacob Bunn; Vice-President, Jacob Bunn, Jr.; Secretary, George A. Bates.

—Buffalo, N. Y., had one of the largest and most disastrous fires that ever visited that city, on the 1st of February, which did a damage of over a million dollars. The large dry goods firm of Barnes, Hengerer & Co., were the principal sufferers, but the fire extended over quite an area, and many firms were involved in the destruction of property. T. & E. Dickinson, whose prosperous business was carried on next door to the large dry goods firm mentioned, were damaged to the extent of about \$30,000, fully insured; the only stock saved being that which was kept in the safes.

—A most essential article for every person who has anything to do with watches or clocks to have is a supply of watch oil of absolute purity. Without its use, or the use of inferior oil, no watch can be relied upon. Mr. Ezra Kelley, of New Bedford, has for fifteen years made a specialty of preparing oil suitable for watchmakers' use, and has produced an article that is highly commended by all who have tried it. He guarantees that it is absolutely pure and free from acid and glutinous matter. It is so well known to the trade, however, that it scarcely needs commendation.

—The Meriden Britannia Company, have made a few improvements in their elegant store at 44 East 14th street. They have rearranged the front part of the store and have added a few new show cases in the centre of the store. The fine condition in which the store is kept shows excellent taste in those who have charge of it, and the beauty of the stock as well as its unique arrangement, prove an irresistible attraction to any who enter the store. The latest design of plated ware shown here is called the "Russian." It is chased in a peculiar manner and oxidized and is shown in lamps as well as in other ware.

—W. C. Edge & Sons have a notice in this issue to which we call attention. They have "something new" which must be seen to be appreciated. Selection packages can be had.

—Mr. T. Sedgwick Steele, of Thomas Steele & Son, Hartford, Conn., has become quite a noted artist since exhibiting a few of his pictures recently at Vorce's gallery at Hartford.

—The Waterbury Clock Co. are having new show windows put in their store at 10 Cortlandt street. They are also re-arranging and beautifying the interior, and in a short while the store will hardly be recognized as the same.

—The Columbus Watch Co. have an announcement in this issue to which we direct attention. Mr. J. M. Morrow, lately with the Hampden Watch Co., is now the agent of this company, and has a temporary office at 41 Maiden Lane.

—Albert Lorsch & Co. are making their usual spring preparations for business, and are now ready to show a finer line of diamonds, precious and imitation stones, jewelry, etc., than ever before. In their diamond ornamented cases especially they have a very full assortment of new and pleasing designs.

—Mr. Chas. Leo Abry, the sole agent in this country of the celebrated Vacheron & Constantin watch, reports that the demand continues to be large for it. As these watches can be procured that fit all American cases, they are therefore quite desirable, aside from the well-known excellence of their make and appearance. They can also be ordered and procured without extra charge, with special firm names or trade marks.

—E. I. Franklin & Co. are just now having a large demand for children's sets. They have a large line, the buttons being of polished and Roman finish, and set with stones of various colors, or without stones. They have also added a large line of plated wire bangles, which continue to be as popular in plate as in gold. These are also made in many designs, with gold front or plated slides, and with or without pendants, of which there is a large variety. Since they began to manufacture the famous "Kreimentz One Piece" collar button in plate, of which they make seven sizes, they have been filled with orders for them, and this button continues to meet with a heavy demand.

—The fact that Bowman & Musser, of Lancaster, Pa., are an enterprising and wide-awake firm, is made very evident by a visit to their establishment. The arrangement of their stock of watches, jewelry, etc., gives evidence of a most thorough business system, and the repair department is orderly and neat. While they are comparatively a young firm, they have gradually placed themselves in a conspicuous position as general jobbers in jewelry and jewelers' tools and materials, and their business is said to be constantly increasing. Their business for the past year has shown a marked increase in the result over previous years.

—Louis N. Fleury, the postmaster at Paso del Norte, Mexico, has been arrested, charged with having stolen diamonds from the mails. At different times within a few years, large consignments of precious stones were sent by mail from Hamburg and other places in Europe to houses in Mexico, but never reached their destinations. Suspicion fell on the postmaster, but he skilfully eluded it by pretending to be anxious to find the guilty parties. One of his clerks absconded shortly afterwards, and the suspicion then rested on him; but it is now believed that Fleury himself furnished the clerk with money to enable him to travel. Recently a package of diamonds valued at \$30,000 was consigned to President Diaz, and when this was discovered to be missing, an investigation was made, with the result that the postmaster was charged with the theft of them and also of a package of \$40,000 lost some time before. Michael Cucat, a young man, an intimate friend of Fleury, has also been arrested in San Antonio, Texas, from whence he will be extradited, and examined as to whether he is not an accomplice of Fleury.

—It is reported that there are about 2,600 hands at present employed at the American Watch Co.'s factory at Waltham, Mass.

—The New England Manufacturing Jewelers' Association had their sixth annual banquet on the 30th of January, at the Wamsutta Hotel in North Attleboro. An account of the affair will be found in the Providence letter.

—Bühler & Nanz are still having a large business in half pearls. They make a specialty of these goods, and receive them in large quantities from their Paris house. In other lines of precious stones and diamonds they carry a good stock.

—R. & L. Friedlander have secured a lease of the upper floors of the building 65 Nassau street, and will soon have an elevator put in. Their representatives on the road during the coming season are Messrs. W. C. Lippus, Abe Harris, Louis Moss and Charley Herzog.

—Mr. J. E. Shepherd has taken desk room in the H. F. Barrows & Co.'s office, 1½ Maiden Lane, temporarily. He has leased half of that office from May 1, and will then conduct a retail jewelry store there, while H. F. Barrows & Co. will occupy the part of the store now occupied by F. I. Marcy & Co.

—The E. N. Welch Mfg. Co. are in the market with a most complete line of clocks. Their assortment includes everything from the highest grades of imported marble clocks to the low-priced clocks called "novelties." In all lines of staple and fancy clocks they have added new patterns for the coming season, and dealers will find at their salesrooms a full assortment of desirable patterns.

—As an instance of the effect of the "copper trust combination" on large consumers of copper or brass, may be cited the case of the Seth Thomas Clock Co., who say that their monthly consumption of brass costs them \$3,000 more now than before the price of copper was increased. This \$3,000 a month advance in the cost of making Seth Thomas clocks has been the main cause of the slight advance in their price list which was made on the 1st of January.

—The old firm of Deming & Gundlach, of Hartford, Conn., was dissolved late in January. Mr. Deming retires and will probably engage in business again at Springfield, Mass., and Mr. Louis Gundlach will continue the business at the old stand with his son, Louis. This firm was established in 1859, being the successor of Walter Pitkin, who occupied the same store for many years. The original proprietor was Jacob Sargent, who established himself at this place early in the present century, and made a considerable fortune.

—The employees of R. & L. Friedlander, upon the occasion of the 32d birthday of Mr. R. Friedlander, showed their appreciation of him by presenting him with a handsome gold-headed cane. The presentation was made on the morning of Tuesday, the 5th of February, during a lull in business, and was an entire surprise to the members of the firm. A few friends of Mr. Friedlander had been invited and they kept the secret well, so that Mr. Friedlander was obliged to listen to several very complimentary speeches, notwithstanding he is a modest gentleman. He responded, however, to the glowing tribute from his employees and duly thanked them for their interest in him, which, after all, he said, was the main cause of his firm's success.

—The American Watch Case Manufacturers' Association held their regular annual meeting in the Board of Trade rooms on Monday, February 13th. President Joseph Fahys resigned, and his resignation was accepted with regret. The members of the association presented him with a silver inkstand suitably engraved. The officers chosen for the ensuing year are: Mr. C. N. Thorpe, President; Mr. George Courvoisier, Vice-president; Mr. George E. Fahys, Secretary, and Mr. F. R. Appleton, Treasurer. The meeting was held at the same time as that of the Jobbers' Association, and committees from each association were sent to the other at different times during the sessions. The sessions continued with adjournments, from Monday till Wednesday. All the sessions were well attended, and much interest was shown by the members.

—Mr. Ernest Zahm, of Lancaster, Pa., who makes a specialty of masonic emblem goods, band rings, etc., reports a good trade in these lines. Mr. Zahm is already well known to the trade personally, and the advantages of youthful enterprise and perseverance are bringing him success and popularity.

—Thomas G. Brown & Sons show a large variety of novelties in gold and silver suited to all classes of trade. Their make of goods is becoming noted for its high grade of workmanship and the beauty and originality of the designs. In silver articles their work is especially commendable, and their cane heads and other similar classes of goods are to be found in most of the leading retail stores.

—At last our famous jewelry district is to have a new building. The jewelry district, which, as long as can be remembered by the younger generation, has never been improved to any great extent by new buildings with modern improvements, such as are going up in other parts of the city, is now to have a new building built on the corner of Broadway and John street. It is to be seven stories high, furnished with all the modern improvements, and is to be exclusively for jewelers. At the present time there are only about half a dozen buildings in the trade which have elevators in them—elevators that amount to anything. There are one or two buildings which do have elevators in which ought to have them taken out, they go so slow. But the average job clerk of to-day, who takes out a dozen little jobs to the top floors of as many different buildings, will hail the advent of the new buildings with elevators. The new building will be begun about the first of May, and meanwhile the present occupants will have to secure quarters elsewhere. The building will extend from the corner of Broadway, on John street, to No. 15 John street.

—A big robbery which will make every jeweler tremble for the safety of his valuables, occurred in Norfolk, Va., on the 5th of February. Chapman & Gale, who do a very fair jewelry business at 152 Main street, were robbed of about \$30,000 of goods between closing time on Saturday night and late in the forenoon of the next day. The safe was forced open and only the valuable goods taken. Plated jewelry was left strewn about the floor as if the discriminating burglars had some positive dislike to it; and the valuable jewelry and nearly \$1,000 in cash were taken. For some days there were nothing but indefinite clues as to the perpetrators, but soon Chapman & Gale employed the detectives of the Security Alliance of New York, and immediately the clue was formed which has since proved a correct one. The thieves were thought to be the same two suspicious characters who had been arrested ten days before in Richmond, Va., where they had been noticed prowling around one of the jewelry stores. Soon after the Chapman & Gale robbery these men were seen to leave a train at Petersburg, and were pursued by the police of that place who had been notified. They fled to the swamps and were followed with the aid of bloodhounds, but escaping during the night, went to Richmond. Here they were captured by the Pinkertons on a street car, with their clothes torn, their faces and hands cut and bleeding from the briars in the swamps. The men have been recognized as Joseph Murray, alias Dollard, and John Ward, alias Jack Walsh, noted bank burglars and cracksmen. They were examined on February 22d, but the evidence against them was merely circumstantial and they were discharged. What was Dollard's surprise, however, when he was then rearrested charged with complicity in the Fairchild robbery at Bridgeport last summer. Dollard and Welsh, shortly after that robbery, went to Liverpool, whence they returned owing to the suspicion they created in the minds of the English police. The entire lot of jewelry stolen from Chapman & Gale has been recovered, having been found wrapped in a rubber blanket and buried in a roadside near Norfolk. At the time of the robbery Chapman & Gale were not members of the Security Alliance but received the assistance of that organization. They have since become members, being fully convinced of the value of the protection it affords.

—We have received a pretty calendar from Hollinshed Bros., of Philadelphia.

—Miller Bros. are very busy preparing for the early spring trade, and show many new patterns in gold jewelry.

—Henry E. Oppenheimer & Co. have removed their offices from 52 Maiden Lane to 47 Maiden Lane, nearly opposite.

—It is said that Foreman Berlin, of the Waltham watch factory, has succeeded in making an electrical deposit of aluminum on brass.

—Schlechter & Henry, of Reading, Pa., dissolved partnership on February 1. Mr. G. A. Schlechter continues the business at the same place.

—Mr. L. A. Cuppia shows a very complete line of novelties in silver and silver filigree. His line includes all kinds of jewelry and is very complete.

—A report comes from Sparta, Mich., that Mr. George W. French has assigned. His liabilities were said to be nearly \$28,000, and the assets small.

—The stock of Mr. H. Z. Rhoads, of Lancaster, Pa., was sold out at auction during last month by Col. J. M. Rutherford, of Philadelphia.

—The retail stock of Simpson, Hall, Miller & Co. was sold out at auction during last month, previous to the large alterations to be made to their building.

—Mr. Samuel Christ, of San Francisco, Cal., died recently aged sixty-eight. He was a noted diamond expert, and has been well known to the trade for many years.

—The average number of employees in each jewelry establishment in Rhode Island is nearly 21, and the average amount of the wages received by each is ten dollars a week.

—Mr. Bitner, manager of the Lancaster factory, is the latest in the field with an anti-magnetic watch movement. It is, of course, superior to all others.—*Every Saturday*.

—The store of Mr. Henry Augermann, Buffalo, N. Y., was robbed on the 19th of February, and the entire contents of the safe, valued at \$2,500, were taken. No clue to the thief has been discovered.

—Self-winding clocks are being made in more styles than ever before. Jewelers will do well to apply for one of the latest catalogues of these clocks, to be had of the American Mfg. and Supply Co., 10 Dey street.

—R. Blackington & Co. manufacture the popular Krementz brace let in plate. They have secured the sole right to manufacture it in plate, and both the plated and gold bracelets of this improved make are more popular than ever before.

—The New Haven Clock Co. is preparing a new salesroom for its New York branch at 29 Murray street, running through the block to 33 Warren street. They will vacate their present quarters in Park Place about May 1, after which time they will be in their new place.

—Among the dealers who sailed for Europe last month we note: Mr. Geo. B. Jacques, of Jacques & Marcus, Mr. W. H. Hyde, of John E. Hyde's Sons, Mr. H. Hodenpyl, Mr. D. E. Oppenheimer, of Falkenau, Oppenheimer & Co., Mr. F. J. Errico, Mr. George Merritt, of the Waterbury Watch Co., Mr. A. Hahn, Mr. M. D. Rothschild.

—Mr. Wm. F. Nye, the producer of superfine oils for clocks, watches and chronometers, writes us that during the present winter, he made tests of his oils at St. Albans, Vermont, while the thermometer was 37° below zero. As is well known, the severest tests to oils of this kind is a rare atmosphere, and Mr. Nye's plan has been to refine his oils in a temperature as low at least as 20° below zero. This process frees the oil from any impurities which may corrode or blacken the pinions of a fine watch and at the same time renders them uninfluenced by any subsequent conditions of the atmosphere

—Ignomar Goldsmith & Co., are now at 20 Maiden Lane. They have a factory occupying the top floor of this building, which has recently been improved throughout.

—Blancard & Co. make the following announcement to the manufacturing jewelry trade: "All our settings, galleries, etc., will be delivered chemically cleaned, free from pickle green, etc. Manufacturers using these goods save from 60 to 75 per cent. on labor."

—The co-partnership between Robert Welch, Jr. and Louis W. Miller, under the firm name of Welch & Miller, has been dissolved, Louis W. Miller, having died. Mr. Robert Welch, Jr., purchased the property, assets and good will of the business conducted by said firm, and the business will be continued by Mr. Robert Welch, Jr., under the same firm name.

—A small fire in the Knapp Building, 41 Maiden Lane, at the bottom of the elevator shaft, occurred on the 13th of February early in the morning. When the tenants of the building came to business on that Monday morning they congratulated themselves on a narrow escape from severe damage, for the fire couldn't have happened in a worse place. It was quickly extinguished, however.

—The L. A. Munger Publishing Company has commenced the publication monthly of the *Trade Price List of Movements, Watches and Cases*. It is proposed to give a correct list of trade prices of all movements and cases, revised monthly. The first number is very full and seems to be complete. It will undoubtedly prove valuable to all dealers.

—The people of the United States spend the following sums annually: For missions, \$5,000,000; education, \$85,000,000; sugar and molasses, \$150,000,000; boots and shoes, 196,000,000; cotton goods, \$210,000,000; lumber, \$233,000,000; woolen goods, \$237,000,000; iron and steel, \$290,000,000; meat, \$300,000,000; tobacco, \$250,000,000; bread, \$506,000,000; liquors, \$900,000,000. Total, \$2,361,000,000.

—Mr. Charles H. Meylan, who has been connected with the firm of Mathey Bros. & Mathez for the last seventeen years, was admitted into partnership on the 1st of February. Mr. Meylan will assume charge of the firm's works at Brassus, Switzerland, where they intend shortly to increase their facilities for producing fine complicated watches, of which they make a specialty. The style of the firm has been changed to Mathey Bros., Mathez & Co.

—The Phoenix Glass Co. are showing some elegant patterns in rich cut glassware. Some "nappies" with handles, which are used for passing bon bons, etc., are among the latest designs. The newest patterns of cutting give a very brilliant and rich effect, and the odd shapes of some of the decanters, pitchers, bowls, etc., are much improved and rendered very effective by the richness of the cut pattern. The other lines of this company, colored and decorated glassware, is being enlarged continually and new designs of lamp shades and globes, handsomely decorated, are shown, which are especially noticeable.

—The big fire on Broadway, in this city, which destroyed several hundred thousand dollars' worth of property was also a field for the manufacturers of fire-proof safes, who showed great interest in knowing whether any safes of their makes which had stood the test of so hot a fire, had come through it all with their contents intact. The Marvin Safe Co. secured several of their make of safes from this fire, and had four of them carted off to their store at 265 Broadway, there to be exhibited as "living examples" of what Marvin's safes are good for in case of fire. The exteriors of these safes are simply scorched and marred beyond recognition, while the interiors were almost as fresh and bright as when new. They stand in front of the Marvin salesrooms, piled one on another, two rows high, completely hiding from view the elegant safes inside the show window, while the passing throng stop and stare and learn the lesson of fire proof safes.

—In answer to the many enquiries after back numbers of THE JEWELERS' CIRCULAR, we wish to state that we cannot furnish any but bound volumes back of 1883. Our stock of loose numbers in 1883, 1884, and 1885, is not complete, and such numbers only as we have can be furnished. We desire to purchase a limited number of the May number of 1886, and of the February number of 1887, for which we will pay twenty cents each. Any subscribers who can spare their copies of those dates will greatly oblige us by informing us of the fact. Hereafter, therefore, in furnishing these numbers, viz.: May, 1886, and February, 1887, we will be compelled to charge 25 cents for each copy.

—Mr. W. F. A. Woodcock, of Winona, Minn., has opened a school of instruction for watchmakers.

—Mr. George H. Houghton, of the Gorham Manufacturing Company, has started on an extended tour to the Pacific coast.

—Mr. C. C. Haensler, maker of jewelry cases, fancy boxes, etc., in plush, velvet and morocco, has moved to 37 John street.

—Mr. George A. French, representing Wm. T. Hedges & Co., sailed for Europe on Saturday, February 18th, on the *Etruria*.

—Mr. Hipp Didisheim, of 83 Nassau street, carries a full line of Swiss watches, and keeps a stock of movements to fit all sizes of cases. He is the agent for M. E. Didisheim, of St. Mier, Switzerland.

—We would call attention to the artistic advertisement of the Sterling Company, in this issue. The excellent taste shown by this company in their advertisement is in keeping with the bright and fresh appearance of their line of goods. They show the very latest designs in all sorts of small novelties in silver, including watch stands, stamp-boxes, inkwells, paper cutters, bonbonnières, etc., besides a line of jewelry in elegant patterns.

—Atkinson Bros., of Philadelphia, the sole agents of the Keystone Watch Company, report an unprecedented demand for the Keystone movements. On the three-quarter plate movements they have orders far beyond their present capacity, and on the dust proof movements they are about a year behind orders. The Watch Company is at present perfecting arrangements in their factory for further facilities, and they promise shortly to produce 300 watches a day.

—The Wm. Rogers Manufacturing Company report a very satisfactory business for the past year. One item in the year's sales was articles of tableware of which 100,000 dozen were sold. This item is apt to make the uninitiated wonder, and well it may, for 1,200,000 pieces is a good many. This company report the prospect as very encouraging. Sales for the first two months in the present year surpassed those of last, and a continuance of this state of things is expected.

—At a meeting of the Gold Case Manufacturers' Association of the United States, recently held at the Board of Trade rooms, much discussion was had over the subject of placing a stamp of quality upon all goods made by the members. The subject received much attention, and many members were very favorably disposed to adopt the Association stamp.

—Mr. F. Kroeber, of the F. Kroeber Clock Company intends to go to Europe next month for the purpose of buying novelties for the jewelry trade. While his firm makes a specialty of clocks, of which they carry a full line, they have also for several years past done some business in small fancy wares which they imported. On these goods they have met with such unvarying success, that Mr. Kroeber now proposes to make the line fuller than ever before. In their Cortlandt street store they had no room to show them, though there was

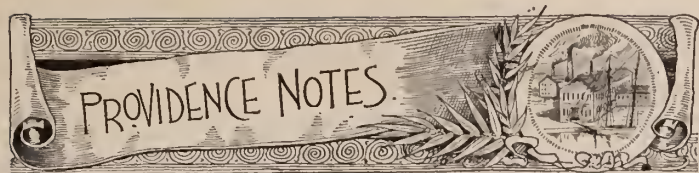
hardly any need, they sold so fast. But in their new store at 360 Broadway, they have plenty of room to display a line of these goods to advantage, and during the present year jewelers can find there a fine line of goods in bronze, brass, porcelain, glass, etc., suitable for their stocks—indeed, necessary to their stocks—such as is seldom found in the salesrooms of a clock house.

—Regarding commercial union with the United States, the *Toronto Trader* prints the following paragraph: "A Mr. Norman, from London, correspondent of the *Pall Mall Gazette* claims that three out of every five men in Canada are in favor of commercial union. It is reported that when he was not under lock and key in the *Globe* office, he was enjoying a Pisgah view of the city from the pulp tower of the *Mail*. If this is so his statement is probably correct. If he moved about amongst the people, however, he must either be a very untruthful or singularly stupid fellow, for we venture to say, that if the question were discussed, and a plebiscite was taken on it, not one man in a thousand would vote for it. The best proof of this statement is the fact that the "*fad*" is practically dead even now. Its own supporters have done nine tenths of the talking about it, with the result that the more they talked the more shakey its chances became. All it wants is to be let alone, and it will die a natural death."

—B. & W. B. Smith, manufacturers of artistic store fixtures, etc., have a factory at 220 West 29th street, in this city, which is well worth a visit. They manufacture everything needed in the line of store fixtures, and do all the preliminary work at their factory. The building is five stories in height, built of brick, 25 feet wide, 98 feet deep, and has an L shaped extension at the rear 75x37 feet. They employ constantly a force of skilled mechanics throughout the year, which varies in number from fifty or sixty in dull times to ninety or one hundred in busy times. On the first floor of the factory is the office and sitting room, handsomely fitted up in a style befitting a firm of B. & W. B. Smith's character. A staircase of polished hardwood leads up to the show room, which is also handsomely fitted up, and contains a variety of show cases in a finished state. They do not keep a stock of cases on hand, but merely have a line in their show rooms to give an idea of what kind of work they can do. Their work, as is well known, is always first class. Messrs. Smith do business on the principle that "what is worth doing is worth doing well," and while their work is thus of the highest grade, and of the best material, the prices will be found to be reasonable. They also control several improvements which they note in their advertisements, and which are so desirable that many inferior imitations are in the market. Messrs. Smith receive orders from all parts of the country to fit up stores, and Mr. William B. Smith is now in the far west estimating and giving advice about fixtures for several large stores. When orders are received from a long distance, the entire work is made in the factory in 29th street, and when completed is shipped and put up in place as well as if all the parts were made directly on the premises. Messrs. Smith display illustrations in THE CIRCULAR of specimens of their workmanship, but these hardly do them justice. Any firms that contemplate any alterations or refitting of their stores will find it profitable to communicate with them before engaging a local carpenter or blacksmith.

THE WORKING DESIGNS.

—Our artist's designs published in this issue again contain some ideas out of the ordinary channels. Numbers 2 and 5 are collar buttons for ladies, with ornamental pendants. The button is placed into the button hole from the front, and the pendants can be made as ornamental or as expensive as desired. Numbers 1 and 3 are designs of earrings set with stones, and make very effective patterns. Number 3 can be set with pearls and turquoises, or diamonds. Number 9 is another design of a link sleeve button after the pattern of those in previous issues.



The general outlook at present is not very good or promising for a rushing business during the spring season; in fact, it hardly promises to be even a moderate one, and those journals that (just previous to the first of January) predicted that the business for the year 1888 would outstrip that of 1887 will, unless times soon take a change for the better, be compelled to retract their predictions, or allow that they made serious errors of judgment in making them. By referring to the January number of *THE CIRCULAR*, page 41, you will notice that the predictions of *THE CIRCULAR* were that "the volume of business for the year 1888 would be a quiet, steady and moderate one, much less in the aggregate than during 1887," and the season, so far advanced as it is at the present time, seems to have filled the prediction to the letter, for the manufacturer claims already that the amount of business transacted to date is, in a majority of cases heard from, at least from twenty-five to forty per cent. less than for the same time one year ago. At that time the sales were from twenty to thirty-five per cent. heavier than for January, 1886, as reported in the March number of *THE CIRCULAR*, 1887, making the business transacted for the year 1888 so far less than the year 1886, which was extremely moderate and unprofitable to refer back to. The great foraging picket guard which was heard from in the February number as reconnoitering around Chicago, Cincinnati, St. Louis and other western cities skirmishing for orders must have experienced some extremely cold days during the past three weeks, to judge from the number and amounts of some of the orders captured by its members, which were represented by the jobbers to be (in a number of cases) "merely complimentary ones," given simply to save them from being completely "turned down;" not that they were in need of any new goods at present, but to give a small order to show that they were kindly disposed toward them. There is no disguising the fact that goods are not moving as they should, and the complaints heard from the manufacturers that there is no business to speak of, are many and loud; already one can hear of this and that concern running on short time and reduced number of employees, all for the want of orders (which do not seem to be forthcoming) to keep them steadily and profitably employed to the manufacturer, and as Lent commenced on Wednesday, the 15th, it is hard to see how business can be very much better before it ends, about the 1st of April, than at present, as past experience has taught us that it has its influence on certain lines of trade to depress them. Again, the coal strikes of the anthracite regions and the heavy snow West and the cold Arctic blizzards have all had their influence to depress the otherwise healthy interests of the country, and force them into the stagnated channel in which they are found at present.

We are pleased to note that the absence of any failures of account during the past month is much appreciated by the manufacturers generally.

Trade paper has put in its appearance again, but not to any alarming extent, as money seems to be comparatively plenty as yet, but may tighten up later on unless the general business of the country should improve.

Collections during January were not as good or settlements made as promptly as during the latter part of December, consequent to the jobbers balancing their books to the first of January.

On Monday evening last the following well-known manufacturers of the jewelry trade were installed in office in Providence Lodge No. 3, of the Ancient Order of United Workmen: P. M. W., Mr. H. S. Dorchester, of Brown & Dorchester; Rec., Mr. George Pitts; I. W., Mr. O. C. Devereux, of Devereux & Co.; and O. W., Mr. George L.

Vose, of Geo. L. Vose & Co. This order is composed of manufacturing jewelers and their employees in this city.

The city fire department was called to extinguish a slight fire in the building No. 80 Clifford street on Friday last, occupied by S. Albro & Co. and W. L. Ballou & Co., Ostby & Barton and others. The loss sustained was light and the fire was soon under control.

The members of the Jewelers' League located here were called on January 25 to pay five assessments for deaths which have occurred in the League during the past three months, the names of same being Albert Ballowitz, No. 1,814; Henry Bodge, No. 199; Willis E. Carpenter, No. 185; Wm. R. Fuller, No. 544; Charles H. Eppstein, No. 3,626.

Mr. R. A. Kipling, the stone importer, who left New York on December 31 per the steamer *La Champagne* of the French line, and arrived at Havre on Sunday, January 8, was startled on the 17th by the cablegram sent to him announcing the sudden and sad death of his brother, Arthur W. Kipling, who so recently succeeded to the business formerly conducted by his brother and himself under the firm name of E. E. & A. W. Kipling. The January number of *THE CIRCULAR* wished him success in his new position, which, we are sorry to note, was of such short duration. Mr. R. A. Kipling was appointed administrator of his estate.

Mr. D. S. Cooke, of the firm of Cooke & Eddy, left on January 9 for San Francisco, per Pacific Mail Steamer via the Isthmus. He intends entering the jobbing business in the city of his new home on the Pacific slope. Cooke & Eddy have been succeeded by Albert Eddy & Co.

Charles S. Pine & Co., who succeeded the old firm of H. A. & G. M. Church, of No. 111 Broad street, will manufacture the "Church" patent roller link chain, also the "Mary Anderson" block rolled edge bracelet. The business under the new regime can hardly help but to prosper.

Mr. R. A. Kipling arrived safely at New York on Sunday, February 5, per the steamer *Elbe* of the North German Lloyd Line, to look after the affairs of his home office, consequent upon the death of his brother, Arthur.

The Association of the Plumed Knights of Providence, composed of many of the manufacturing jewelers, held a very pleasant reception and social on the 24th ultimo, at Spinks' Dancing Academy on Broad street. Col. Isaac L. Goff, of W. R. Richards & Co., stands at the head of the organization. Other jewelers whose names were on the different committees may be mentioned as Mr. John A. McCloy, Mr. Fred. I. Marcy, Col. Isaac L. Potter, Mr. George W. Hutchison, Mr. H. L. Dorchester, Mr. A. A. Busbee and Mr. George H. Holmes, Jr.

The firm of H. Ludwig & Co., of No. 195 Eddy street, was dissolved by mutual consent on February 8, Mr. J. H. Clark retiring therefrom. The business will be conducted as formerly by Mr. H. Ludwig, under the style of H. Ludwig & Co., who assume all responsibilities against the old concern.

The firm of Cameron & Cooper, at No. 107 Friendship street, dissolved some weeks since by mutual consent, Mr. Fred Cooper having retired. Mr. W. H. Powers, formerly manager of the Providence branch of the Jewelers' Mercantile Agency, has been admitted as partner. Mr. Bowers is one of those pleasant, affable gentlemen, which it is a pleasure to meet either in business or socially, and has hosts of friends in this city as well as in New York, his former place of residence. The style of the firm name will hereafter be Cameron & Bowers, and continue business at the old number.

The sixth banquet of the New England Manufacturing Jewelers' Association was held at that famous hostelry at North Attleboro, the Wamsutta House, and Emmet Hall, last month. The affair was a complimentary reception to the ladies. Two special cars were attached to the 6.20 train from this city, which conveyed a merry and representative party of prominent local manufacturers who, with

their wives and lady friends to the number of nearly one hundred, were joined at East Attleboro by a party of twenty-five or thirty fellow-jewelers and their fair partners. On their arrival at North Attleboro they were escorted to Emmet Hall, directly opposite the Wamsutta House, where the National Band Orchestra of Providence gave a concert, and an informal reception was held, the party being augmented by the local members of the Association to the number of nearly two hundred. At 7.30 o'clock the procession was formed and ushered into the banquet hall at the hotel, where Mr. H. B. Davenport, the genial proprietor, had prepared an elaborate menu of twelve courses. At the central table First Vice President Edwin Lowe occupied the post of honor, with Second Vice-President A. A. Bushee, Secretary John A. McCloy, Treasurer H. F. Carpenter, Messrs. John M. Buffington, Frank T. Pearce and Henry G. Smith, of the Executive Committee, and other gentlemen, comprising representatives of some of the pioneer manufacturing establishments in Providence and Attleboro. The hour passed pleasantly in social intercourse and good cheer, then the party returned to Emmet Hall, where a popular programme of fifteen dances was enjoyed to the music of the National Orchestra; young and old entered into the terpsichorean entertainment with the greatest pleasure. Arrangements had been made for the delegation from this city to leave at 11.30 P. M. in time to connect with the "owl train" at midnight, all too soon compelled to make their adieus and proceed to the depot. The trip to this city was enlivened by singing and merry conversation, the train arriving here on time promptly at 12.25 A. M. The whole affair was voted one of the most successful and enjoyable occasions held thus far, and the departure in inviting the ladies to the winter re-union was unanimously declared to be a great success. The Executive Committee, Messrs. Buffington, Pearce and Smith, sought zealously and successfully to make the occasion pleasant, and were ably assisted by Messrs. A. A. Bushee and H. M. Daggett, Jr., of East Attleboro, and W. W. Fisher and R. Blackington, of North Attleboro.

The annual meeting of the manufacturing Jewelers' Board of Trade was held yesterday at Room 9, Wilcox Building. The following named members were unanimously elected directors for the ensuing year: D. Wilcox, Fred. I. Marcy, R. S. Hamilton, Jr., W. M. Fisher, Wm. R. Dutemple, N. B. Barton, W. E. White, T. E. Carpenter, G. L. Vose, H. S. Dorchester and H. Howard, of Providence; J. L. Sweet, of Attleboro Falls; D. H. Cory and J. D. Lincoln, of Plainville; D. S. Spaulding, of Mansfield; S. E. Fisher and E. I. Franklin, of North Attleboro; and E. S. Horton, J. J. Horton, A. A. Bushee and H. Clapp, of Attleboro. The meeting for organization of the Board of Directors and election of its officers took place on Saturday, February 4, 1888.

The Secretary submitted his report as follows:

To the President, Officers and Members of the Manufacturing Jewelers' Board of Trade: GENTLEMEN—I have the honor to present herewith for your consideration the annual report of the transaction of this office for the year ending to-day. I shall of necessity have to present a report covering a portion of the year which came under the supervision of my predecessor, but in this I have had the ready and cheerful service of my assistants in the office, Messrs. Cottrell and Kraus, which has rendered the task much less perplexing than it otherwise would have been. On the 5th of February, 1887, the members chosen as directors for the ensuing year, met and organized as follows: President, Dutee Wilcox; First Vice-President, Fred. I. Marcy; Second Vice-President, Joseph L. Sweet; Treasurer, John A. McCloy. Mr. George E. Emery was re-elected Secretary. As members of the Finance Committee, the following gentlemen were re-elected: E. S. Horton, R. S. Hamilton, Jr., and Nathan B. Barton. On the 19th of May, 1887, Mr. H. S. Dorchester was elected Treasurer, vice John A. McCloy resigned, and on September 8, 1887, a change was made in the office of Secretary. There have been held during the year 24 meetings of the Board of Directors, 12 being reg-

ular and 12 special. The Board of Trade has held its regular quarterly meetings, with the single exception of the second quarter, at which no quorum was present.

FAILURES.

The records show 17 failures for the year ending with to-day, being 6 less than the previous year. The amount of indebtedness to members \$155,860.71, as against \$110,162.83 for the year ending January 31, 1887, an increase in amount of more than 29 per cent.

COLLECTIONS.

The collection department of the Board shows the following business of the year: Whole number of claims for collection 104, amounting to \$11,074.87.

Number of claims collected 68, amounting to....	\$5,698.81
“ “ pending 18, “	3,796.59
“ “ doubtful 5, “	547.63
“ “ uncollectable 13, “	1,031.85

\$11,074.87

Of this department we are pleased to publish an extract from a letter of one of our members; they say: "Enclosed please find receipt for check in full settlement of claims left with you for collection. It seems to us that in the collection of claims the department is of great assistance to the members, for we could not have settled this claim without a process of law, while the settlement has been made by you, showing that if proper attention is given to various subjects that have been brought to the notice of the Board, the department can be made of great service to its members.

REPORTS.

For the year ending with to-day we have received 2,966 inquiries from members, have issued 755 regularly numbered reports and 464 incidental reports. I am assured that a great improvement is noticeable in the return of answers to our calls for information, but let all bear in mind that promptness in answering inquiries enables us to give prompt service in return to members who ask for the same.

MEMBERSHIP.

The total membership is 113.

Number of members at last annual report..	106
“ admitted (new members).....	13
“ reinstated.....	3
	<u>122</u>

From which deduct, resigned.....	6
dropped.....	1
expelled.....	2—9

Present membership 113, with two applications on hand.

The firm of Atkinson & Co., No. 67 Friendship street, has dissolved by mutual consent of both parties, Mr. Atkinson retiring. Mr. Fred. R. Pennell, the Co., has admitted a partner, and the style name of the new firm will be Fred. R. Pennell & Co., and continue business at the same number as formerly.

Howard & Son, of No. 102 Orange street, is one of the very few firms which report a very satisfactory trade for the month of January, although Wm. H. Robinson & Co., chain makers, of No. 9 Eddy street, report that they have all the orders on hand that they can possibly attend to at present. Chain houses seem to have a regular boom on so far this season.

Wm. Jeffrey, lately employed by Foster & Bailey, of No. 60 Richmond street, was detected the past week in the act of purloining one locket. He was arrested and tried in the District Court, and fined five dollars and costs.

The directors of the Manufacturing Jewelers' Board of Trade, elected at the annual meeting January 30, met at the rooms of the Board of Trade to-day and organized with the choice of the following officers: President, Dutee Wilcox, Providence; First Vice-President, Fred. I. Marcy, Providence; Second Vice-President, Joseph

L. Sweet, Attleboro Falls; Treasurer, Hoffman S. Dorchester, Providence; Secretary, Marcus W. Morton. Messrs. E. S. Horton, N. B. Barton and R. L. Hamilton, Jr., were elected Finance Committee. A committee consisting of Messrs. W. R. Dutemple, Hiram Howard and George L. Vose, with Secretary Morton, *ex-officio*, were appointed to revise the Constitution and By-Laws of the Association. The committee will probably give notice to the members of their sessions to receive any suggestions that may be deemed essential in the matter of interest to the trade and the better development of the Association.

The fire of last night, which originated in the Chase block on the corner of Eddy and Fountain streets, proved to be more disastrous than was at first expected. The following were entirely burned out, as well as the whole building which was razed to the pavement: On the second floor, Mr. Wm. G. Budlong, manufacturer of jewelers' tools, Wm. H. Beatty & Co., Hough & Wilkinson and others, manufacturing jewelers. On the third floor was located the works of W. H. Robinson & Co., manufacturers of watch chains, Reed & Hudson and other jewelers. The fourth floor was occupied by Mr. J. H. Sturdy, electro-plater, and others. W. S. Hough, Jr., & Co., carried an insurance of \$15,000 on stock and fixtures.

Mr. F. J. Favro, the jeweler, located in the Aldrich House, burned in the late fire, sustained a loss of about \$2,500, only partially covered by insurance of \$500.

Mr. Kent, of the firm of W. H. Robinson & Co., when he saw the ruins fainted away.

C. A. & J. D. Fowler made one of their piscatorial trips down the road to Kingston the past week, and were rewarded for the labor incurred in cutting eighteen inches of ice in thickness by bringing back with them about 40 pounds of fine pickerel, some of which weighed four pounds.

Mr. R. A. Kipling has arranged with Mr. Simon Sencerbox, who has had charge of his affairs in this city for the past three years, to remain with him for some time to come. Mr. Sencerbox is an able manager and a polished gentleman.

FAIRFAX.



The reports are somewhat conflicting of the present condition of wholesale trade in the Northwest. As the usual collections are being made after the holiday season, it is being discovered that the storm which antedated Christmas a day or two, cut off much of the holiday trade, and the smaller dealers throughout the Northwest still have a large part of their holiday stocks on hand, and are responding slowly to the calls for the payment of their January bills. The winter has been a rather severe one for this latitude, and travel has been more or less interrupted on the railroads, all of which has conspired to limit sales, never very large at this time of year, in the country. In the cities the dealers are having a very fair trade for this time of year, and traveling men are numerous here now. Merchants are laying in such new goods as are needed to keep their stocks full. Mr. Myers, in St. Paul, told me that he has had an exceedingly good trade for January, and thus far into February, and Mr. Legg and the Eustis Brothers, in this city, verify this statement.

I had something to say in my last letter about the jewelers who sold goods in the lumber camps. I have it from one of the parties so engaged, that he has already sold thus far this winter about \$23,000 worth of goods and he confidently expects to sell fully \$35,000 worth before the men come out. The goods are delivered and orders taken on the firms, which are cashed when settlement is made

with the loggers in the spring. There is a good deal of expense attendant upon this class of business and some risk, but in this case, at least, the business has been a profitable one. The goods sold are principally watches, chains and goods calculated to delight the masculine mind.

The Warner Jewelry Company has closed up the jewelry establishment of C. H. Todd, at New Richmond, in Wisconsin. Mr. Todd was also running a store at Hayward, Wisconsin, which was also affected by the accident of the Warner company. The failure is the result of trying to do business spread over too much ground. Mr. Todd was formerly in business in Minneapolis, and was quite successful. His liabilities are about \$7,000, and his assets said to be worth about \$3,000. He has already re-established himself in the repairing business at New Richmond, and his creditors will fight over the assets.

M. Bernsheim is about to open in St. Paul a wholesale house, to handle jewelers' goods and supplies. Strange as it may seem, St. Paul has heretofore had but a single wholesale jewelry establishment, although in other lines of trade the jobbing interest is more largely developed than in Minneapolis, where there are now no less than seven jobbers. Of course this new accession to the ranks of the jobbers in that city is welcomed by Mr. Becken, a jobber who handles principally movements and watch cases.

Minneapolis, Minn., Feb. 15th, 1888.

Obituary.

JOSEPH T. BACON.

Joseph T. Bacon, was born May 21st, 1818. He was the son of George and Avis B. (Fales) Bacon. His father was a farmer in moderate circumstances, and had no special educational advantages further than the public schools of his native town. In 1831, when only thirteen years of age, he was placed in the establishment of Robinson & Co., button manufacturers, to learn the trade. He remained here five years, and at the age of eighteen he and his brother Ebenezer formed a copartnership and commenced the manufacture of rings at Robinsonville, Mass. A few years later, Mr. Edward Richards became associated with them. In 1838, Mr. Bacon withdrew from the firm and moved to Oldtown, where he associated with Mr. Lewis Holmes in the manufacture of jewelry under the firm name of Bacon & Holmes. In 1841, Mr. Holmes withdrew and J. H. Hodges and George Mason were taken into the firm under the style of Bacon, Hodges & Mason.

In 1844, Mr. Bacon purchased the site of the present large factory in Plainville, upon which at the time stood an old stone shop about fifty feet long and two stories high. Immediately after this purchase the firm of Bacon, Hodges & Mason moved into it. About 1847, Mr. Mason retired from business, and three years later Hodges and Bacon dissolved, making a division of the real estate and other property. Mr. Hodges is now a resident of Attleboro.

In 1850, Josiah Draper and John Tift were taken into the firm and the style was changed to Draper, Tift & Bacon. These new members were pioneers in the jewelry business and had considerable experience in the business.

On Fast Day morning, 1850, a fire was discovered in the building occupied by this firm, and it was burned to the ground. The insurance had run out only a few days before, and it was a total loss. As soon as possible a new and larger building was built upon the site of the old one, the dimensions being 30 x 100 feet. Since this time additions have been made to accommodate the firms who occupied it. In 1851, Mr. Tift died, and his son Francis L. Tift shortly after took his place. Shortly after Mr. Draper retired, and his interest was taken and managed by his son Frank S. Draper. About this time Mr. J. D. Lincoln, who had been a salesman for the firm was admitted to partnership and the style of the firm was changed to Draper, Tift & Co. Somewhat later another change

was made by the retirement of Mr. Draper to Lincoln, Tift & Bacon. Of late years the firm has been known as Lincoln, Bacon & Co., the two senior members having somewhat withdrawn from active business, leaving their interests in the hands of the other partners, Messrs. H. G. Bacon and D. O. Schofield.

Twelve years ago Mr. Bacon made some extensive purchases in the south, which he owned at the time of his death. He also owned the Arnold Mills property besides several farms in the town of Wrentham.

He married Emaline M., daughter of Harland Hodges, of Maine, by whom he had three children, Harland G., Charles B. and Maria. His wife and one son survive him.

In politics Mr. Bacon was a republican, but although often times urged to accept office always declined.

He was the prime mover in founding the Plainville Savings and Loan Association, and at the time of his death was a director in it. In the death of Joseph T. Bacon, Plainville has lost one of its best and most enterprising citizens; one who has done more than any other to build up the place. In his business enterprises he would work with a determination which overcame all obstacles, and as is generally the case with such men he met with success.

He was generous to a fault, and to those who were sick or in want he had ever a sympathetic heart and open hand. He had a genuine hatred of all hypocrisy and deceit, yet he made but few enemies for all were impressed with his sincerity and honesty of purpose. To those who were trying by honest means to better their condition, he always had an encouraging word oftentimes giving substantial aid, and he will always be remembered for his public spirit and for his many good qualities of head and heart.

The funeral services which were held the 8th inst., were attended by a very large number of sympathizing friends, and were conducted by Rev. W. F. Potter, assisted by Rev. H. H. Osgood. The casket was surrounded with a wealth of floral offerings scarcely ever equaled in this vicinity. About a hundred of his late employes preceded the cortege to the Plainville cemetery, where the remains were left in their last resting place.

Trade Matters in Denver.

Trade since the new year has been rather moderate, and not quite so brisk as a year ago. It may be partially accounted for by the absence of the legislature and the accompanying throng, who do most of their trading at the State capitol. A good year's trade is anticipated and assured, however, as the population is increasing very rapidly and the city is full of Eastern people who are beginning to find out that it is not necessary to go to the swamps of Florida, or clear through to the Pacific slope to find a perfect winter climate. M. Goldman, a pawnbroker, on Seventeenth street, skipped out about the middle of January with about five thousand dollars worth of goods, leaving his creditors to mourn his absence. He was last heard from in New York, en route for Australia. Eppenstein & Co., of Chicago, were his principal merchandise creditors, and were lucky enough to get the "tip" in time to secure themselves. His wife, whom he left behind, claims to have been defrauded out of several thousands. Goldman is a man about fifty years of age, tall, weight about 175 pounds. He has dark curly hair and is by profession a "travelling optician." As he decamped with several pawned watches, should his presence be ascertained, please wire chief of police, Denver, Col.

Mr. Franklin Thorpe, a veteran jeweler, celebrated his eightieth birthday the 16th inst. He was presented with a purse of \$125.00 from his brother craftsmen. Mr. Thorpe led the orchestra which furnished music for the occasion, with a violin 175 years old. Many prominent jewelers were present and a most enjoyable evening resulted.

Mr. A. F. Hoberl, the well known lapidary, and Mr. C. W. Ledger

the watchmaker, remove this week to their new and elegant store on Lawrence street. The factory will be continued at the old stand on Sixteenth street.

Mr. A. L. Lackey, for many years with the Tryner Jewelry Co., has removed to 1513 Curtis street, where he has a large run of fine work.

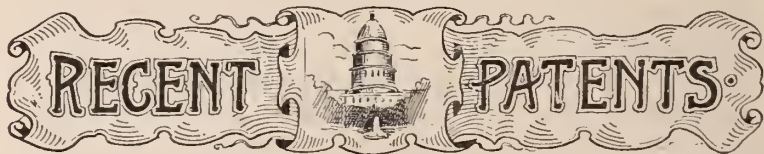
Tryner & Allen, at 1124 Sixteenth street, are a new firm (although Mr. Tryner is one of the veterans). They are making a specialty of Waltham goods. Prof. Ford, optician, occupies a portion of their store.

Wm. H. Robinson & Co.'s representative, Mr. F. W. Ayer, of Providence, R. I., was in town the past week, showing up their new seamless filled chain. Their line of ladies' and gents' chains is the admiration of the trade.

Mr. Max Emmanuel, well known on the road in this section in the past as Max Freund's representative, has engaged with Marx & Weiss of New York, and will cover same territory. Another month and the "regular army" will appear in full force. Colorado trade has grown to be metropolitan and no "chestnut" patterns can be inflicted as in olden times. The best goods find a ready market here.

ROUGH DIAMOND.

DENVER, Col., Feb. 18, 1888.



The following list of patents relating to the jewelry interests, granted by the U. S. Patent Office during the past month, is specially reported to THE JEWELERS' CIRCULAR by FRANKLIN H. HOUGH, Solicitor of American and Foreign Patents, 925 F Street, N. W., rear U. S. Patent Office, Washington, D. C. Copies of patents furnished for 25 cents each.

Issue of January 31, 1888.

- 377,076—Sheet Metal Chain. George M. Jewett, Bridgeport, Conn.
- 377,108—Safety Pin. Joel Jenkins, Montclair, N. J.
- 377,235—Button or Stud. Stephen L. Child, Providence, R. I.
- 377,240—Clock and Lamp Combined. J. M. Crawford, Philadelphia, Pa.

Issue of February 7, 1888.

- 377,489—Method of Making Watch Springs. John Logan, Waltham, Mass.
- 377,550—Combined Cigar Tip Cutter and Match Box. Otto P. Elterich, Newark, N. J.
- 377,558—Clock Striking Mechanism. Lars Halvorsen, Laurvig, Norway, Assignor to Halvor Halvorsen, Paris, France.
- 377,596—Lathe Chuck. Edmond P. Bavielle, Brussels, Belgium, Assignor by mesne Assignments to Stephen Nicholson and Stephen Waterman, both of Providence, R. I.

Issue of February 14, 1888.

- 377,820—Ice Pitcher. James E. White, Malden, Assignor to James W. Tufts, Medford, Mass.
- 377,839—Chronometer Escapement. Paul T. A. Rodeck, Amsterdam, Netherlands. Patented in France, England and Italy.
- 377,895—Secondary Electric Clock. Wirt B. Harvey, Memphis, Tenn.
- 377,896—Stop Watch. Edouard Heuer, Bienne, Switzerland. Patented in Germany and in France.
- 377,897—Stop Watch. Edouard Heuer, Bienne, Switzerland. Patented in Germany and in France.
- 377,935—Striking Mechanism for Clocks. Emile Groux, Wilkes-barre, Pa., Assignor of one-third to Samuel Hirsh, same place.
- 378,043—Setting for Ornaments. William C. Edge, Newark, N. J.
- 378,054—Safety Catch for Breast Pins. John Johnson, Baton Rouge, La.

Issue of February 21, 1888.

- 378,339—Display Stand for Non-Magnetic Watches. Alfred C. Smith, New York, N. Y.
- 378,399—Music Box. Auguste L'Epée, Sainte Suzanne, Doubs, France.



VOLUME XIX.

NEW YORK, APRIL, 1888.

No. 3.

THE JEWELERS' CIRCULAR

AND

HOROLOGICAL REVIEW.

OFFICIAL REPRESENTATIVE OF THE JEWELERS' LEAGUE, THE NEW YORK JEWELERS' BOARD OF TRADE, AND THE JEWELERS' SECURITY ALLIANCE.

It is also the Recognized Exponent of Trade Interests.

A MONTHLY JOURNAL DEVOTED TO THE INTERESTS OF WATCHMAKERS JEWELERS, SILVERSMITHS, ELECTRO-PLATE MANUFACTURERS, AND THOSE ENGAGED IN THE KINDRED BRANCHES OF ART INDUSTRY.

SUBSCRIPTION.—To all parts of the United States and Canada, **\$2.00 per Annum**, Postage Paid. To all Foreign Countries, **\$3.00 per Annum**, Prepaid.

All communications should be addressed to

SETH W. HALE, PRES'T,
THE JEWELERS' CIRCULAR PUBLISHING CO.,
189 BROADWAY, NEW YORK.

Advertising rates made known on application.



A full Index to Advertisements and Table of Contents will be found on Page 5 of this issue.

A MAIDEN LANE diamond dealer exhibited to a reporter a few days since what he claimed to be an old mine diamond in the neighborhood of four hundred years old. It was set in a slight finger ring, weighed $5\frac{3}{4}$ karats, and is said to have been cut originally by coolies. The cutting is somewhat similar to the cutting of the present day, but the stone is to be recut with a view to giving it even greater brilliancy than it now possesses. It has a greenish-blue tint which is believed to be due to the cutting, and it has been preserved heretofore more as a curiosity than anything else. The re-cutting will reduce it to about a three karat stone and will add to its salability, making marketable what is now simply a curiosity.

THE freaks of misers are incomprehensible. An old man died in Boston recently in the most abject poverty, in a dingy little hole that he had occupied as an abiding place for many years. When his body was found it lay in the midst of old tools, old clocks in various stages of incompleteness, while on a rack near a window were scores of gold and silver watches, their chains dangling over the dead

man's head. Eleven clocks stood on the window sill, while in another room there were over 100 of various styles and makes, from the old Swiss clock with wooden works to the modern brass clocks of American manufacture. Some of these were half buried in the heap of foul rags that constituted the bed of the old miser. These rags were also found to contain many coins of various kinds, and many others were stuck in the chinks of the walls. It turned out that he left property worth about \$70,000, largely real estate in and around Boston.

WE PRESENT with this issue another excellent portrait of one of the well-known veterans in the trade, Mr. Hiram Camp, President of the New Haven Clock Company, and on another page will be found a sketch of his life. We think it will be conceded that the artist has produced a life-like portrait, and that the style of the work can hardly be excelled. It has become very much the style lately to print cheap cuts of individuals that are alleged to be portraits, but that are in reality no better than caricatures. The daily papers, we believe, are responsible for this degradation of art, but the trade papers have not been slow in following their example. We have too much respect for the members of the jewelry trade to hold them up to criticism, if not ridicule, by printing these cheap "rogue's gallery" monstrosities, and any portraits that we may give will be artistic and life-like, such as the members of the trade will be glad to preserve. The process by which this portrait is produced is substantially the same as a steel plate engraving, being engraved and printed by hand on copper plate presses.

THE terrible storm of snow and wind that struck New York and vicinity on March 12 lasting three days, was the most terrific ever known in this section of the country. From Sunday until the following Thursday the city was isolated from the rest of the world; the city was snowed under, while during the storm it was almost impossible for any person to stir out of doors. Owing to the blockade of all the railroads leading into the city, thousand of business men who live in the suburbs were unable to reach their places of business for several days. In fact, business was suspended substantially from Saturday till Thursday, although most of the railroads were running irregularly on Wednesday, but it took considerable time for business men to dig out their places after reaching the city. The banks suffered alike with all other kinds of business, and it was necessary to extend special accommodation all around. The loss of life on the Atlantic coast on account of the storm was something terrible, but less than might have been expected, owing to the great amount of shipping exposed to it. Every individual had experiences of his own to relate, and for a week all were employed in relating to others their adventures, some of which were almost tragical while

others were humorous. It was such a storm as not even the "oldest inhabitant" had ever experienced, being a regular northwestern "blizzard" minus the extreme cold. Had the mercury been a few degrees lower the suffering would have been multiplied to an unprecedented extent.

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FROM the monthly report of the secretary of the treasury regarding imports, we learn that for the month of January last there were brought to this country "jewelry and manufactures of gold and silver" to the value of \$87,301 as against \$55,645 in the previous January. For the seven months ending January 31, the imports under this head amounted to \$670,419 as against \$532,143 for the corresponding period of the previous year. Of "precious stones and imitations not set" there were imported in January an amount valued at \$565,900 as against \$639,818 during January of last year. For the seven months ending January 31, the importations of precious stones aggregated in value \$5,842,362 as against \$5,742,313 for the corresponding seven months of last year. Of "watches and parts of watches, watch material and movements" there were imported in January a quantity valued at \$100,197 or about \$20,000 more than in the previous January. For the seven months the importations under this head amounted to \$981,917 against \$877,117 for the corresponding period of the previous year. This shows a considerable gain in the value of our importations in these lines of goods.

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THE death of Emperor William, of Germany, last month, was an event that excited the interest of the whole world, and in no section to a greater extent than in this country, where are gathered so many natives of Germany. His death had been long anticipated as an event that might occur at any moment, owing to his advanced age, he being ninety-two years old, and, as a consequence, no financial crisis was precipitated here or abroad. In view of the fact that the Crown Prince is suffering from cancer, and that he probably cannot survive more than a few months, added to the anxiety which the death of the Emperor would naturally have caused. He became his father's successor by law immediately, and was at once lawfully proclaimed Emperor of Germany and King of Prussia, under the title of Frederick III. Upon his death the succession devolves upon his son, William, who is a favorite of Bismarck, and is already performing the executive duties of the government, in accordance with the orders of the late Emperor. Emperor William had ruled with eminent success for twenty-five years, and to his wise and pacific administration Germany owes much of her present high standing among the nations of the earth. His death was universally regretted, for while he had made friends generally, he had also taught the enemies of his country to respect him.

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ONE OF the chief topics of conversation in trade circles of late has been the action of the National Association of Jobbers in American watches. At their annual meeting a resolution was adopted prohibiting any jobber from selling a movement without a case, or stipulating that as many cases as movements must be sold with each bill. Retail dealers feel that this action bears rather heavily upon them in some cases, and several of them have written us in strong terms denouncing the association. The more moderate of these communications we print in other columns, and also give the full text of the circular sent out by the secretary of the association explaining the reason why such resolution was adopted. While so much controversy is going on over this resolution, it is proper that the association should be heard as well as those who are opposed to it, in order that there may be no misapprehension or miscon-

struction. It will be noted that in the preamble to the resolutions adopted it is set forth that a peculiarly aggravating condition of affairs exists in the trade, and it is to remedy this that the action of the association is taken. Peculiar diseases demand peculiar remedies, and with the disappearance of the disease the remedies used may be safely shelved. We presume that the resolution referred to was only intended to be operative while the condition complained of continued to exist, and may be repealed at any time it is deemed expedient to do so. Probably if those whose complaints are loudest would be content to wait patiently for a time the wisdom of the action of the association might be made apparent to them; or, if a mistake has been made, it might be remedied without exciting animosities or personal hostilities. A perusal of the circular issued by the secretary of the association will give its readers a full knowledge of the reasons which actuated that body in passing them, while the letters we print from various correspondents will indicate how the retail trade receives the action taken in their interests.

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PROMINENT dealers in the trade generally look forward to a liberal amount of business during the coming season. The spring trade thus far has been even better than they expected, and they see no reason now why it should not continue to be good. After the holiday trade is over a season of dullness is always expected, and real driving, active business is not looked for until the following fall. A desultory trade is expected during the spring and summer, and if actual stagnation does not take place dealers in general are satisfied. They have no reason to complain of the conditions so far this year, and as they construe the outlook favorably, they are making all due preparations to supply whatever demand may come upon them. One prominent dealer remarked recently that the jewelers throughout the country were generally in a satisfactory financial condition. For several years they have avoided overstocking themselves, and have done much towards liquidating their liabilities, so that at the first indication of an increasing demand for goods they are prepared to replenish their stocks with fresh goods, and will not feel compelled to spend their efforts in trying to work off old stock that is out of style. While the retail dealers are, as a rule, he remarked, slow to pay, and inclined to avail themselves of every indulgence their creditors will allow, collections have been fairly good during the past few months, indicating that the retail trade finds itself in good financial condition. This gentleman predicts that the sales of the present year will exceed those of last year. He does not believe in the current idea that a Presidential election, or any other political event that is foreseen and anticipated, has any perceptible effect upon the trade of the country. Whatever the public wishes in any line of goods, that will the public buy, whether a Presidential election is pending or not. He inclines to the belief that a political contest is good for trade, inasmuch as it puts considerable money in circulation that would otherwise remain tied up in investments or in the banks. Manufacturers are always active in preparing for future trade, and their designers are constantly preparing new styles for presentation whenever the conditions are favorable.

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IN consequence of a fire that broke out in an adjoining building, the jewelry stock of the Mermod & Jaccard Jewelry Co., of St. Louis, was recently damaged by water to a large extent. The stock exposed was valued at \$350,000, but was so protected that only a portion of it was injured. The loss was adjusted by the insurance companies at \$15,000, which sum was paid. Now the companies are growling because they had not insisted upon the three-quarter clause being inserted in their policies, whereby the insured is made to stand one-quarter of any loss that may occur. The popular idea is that

insurance companies are organized to pay losses by fire, and that they collect premiums from many to enable them to pay the losses of the few, but in actual practice, the insurance companies want a man to make his risk fire-proof, pay a big premium for his insurance and then stand the loss himself if one occurs. It behooves property owners in these days to look carefully after their insurance, for the companies have been carrying on business for so many years on a suicidal principle that some of them have become untrustworthy. The unusual number of large fires this year has inflicted heavy losses upon them, so that the surplus they showed in their annual reports on the first of the year has been materially encroached upon, and in some instances capital has been impaired. Two or three companies have already given up the fight and retired from business while there was a chance to return the stockholders their money, and others are now trembling on the verge of insolvency. Property owners who entrust their insurance to brokers should especially look to it that their policies are in good and trustworthy companies, for brokers are too frequently tempted by the high commissions offered by struggling companies to sacrifice the interests of their principals, and give them policies in companies that cannot be relied upon to pay losses promptly. A person who has met with a loss by fire does not wish to be forced into a long litigation to recover his insurance, and an inspection of his policies occasionally may save him a vast amount of trouble.

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IN THIS connection we may say that the general purpose of the Association of Manufacturers and Jobbers in Movements and Cases is to overcome that destructive competition that was injurious alike to all branches of the trade, taking away the profits that each, from the manufacturer to the retail dealer, had a right to expect from his investment of money, labor and experience. Competition in these goods had run wild for a time, and the only way apparently to effect reforms in this matter was by uniting the manufacturers and jobbers and laying down rules for their guidance in handling these goods. The association has been subjected to some criticism within the trade, and it is possible that this criticism is just—we shall not attempt to pass upon that question—but it would be singular if, while seeking to lift the business from the depths of demoralization into which it had sunk, some mistakes were not made. Time and experience, those universal healers, may safely be trusted to right any mistakes that may have been made. So long as the ulterior purposes of this, or any other movement for reforms in trade practices, are commendable, the efforts to secure those purposes should have the earnest support of the trade. If mistakes are made they can be more readily corrected from within than from without, and any public attacks upon the action of the association, or the motives of those who take such action, are to be deprecated. The promoters of such reform movements should always be credited with honesty of purpose until the reverse be shown, and their mistakes be regarded as the mistakes that all mortals are liable to. We are convinced that the original purposes of this association were in the best interests of the trade, and we do not propose to be drawn into the hue and cry that has been raised against it until it is clearly shown that its purposes have been subverted, and that its machinery is being used as a means of malicious persecution and oppression. Primarily the association is to be commended for the good it seeks to accomplish, and its errors, if it makes them, should be regarded leniently until their injustice is demonstrated. We only wish it were possible to introduce into other branches of the trade similar combinations to prevent cutthroat practices, and to bring the business into a more satisfactory and profitable condition.

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MR. JOHN W. MILES, of the Meriden Britannia Company, has prepared, and that company has printed in handsome style, an extensive pamphlet entitled "Hand-Book of Hotel Furnishing."

Numerous illustrations are given of various hotels, steamboats, and their dining-rooms, and also of their table ware as supplied by the Meriden Company. Various autograph letters are included in the pamphlet, together with copies of *menus* prepared by famous cooks for notable dinners given recently by or to distinguished individuals. An interesting illustrated chapter explains how napkins may be folded in novel and attractive forms, while another illustrates and explains the several processes employed in the manufacture of plated ware. This pamphlet is something more than an advertisement for the Meriden Britannia Company, for the author has judiciously incorporated with his description of the company's goods so much other valuable and instructive matter that the pamphlet will be preserved by all who receive it. It is gotten up in an artistic style, the numerous illustrations being well executed, and it is handsomely printed on clear white paper. It is curious to note what is required in the line of plated ware to equip a modern hotel, and we append the list for a hotel of 450 rooms: Dining room—150 sugar bowls, 60 pitchers for hot milk, 150 butter dishes, 50 water pitchers, 150 cake baskets, 200 individual coffee pots, 200 tureens (1 portion), 25 mustard pots, 15 fruit stands, 48 wine coolers, 750 individual salts, 20 cheese scoops, 8 dozen nut picks, 40 dozen dessert knives, 40 dozen dessert spoons, 85 dozen medium forks, 150 butter knives, 150 mustard spoons, 18 dozen oyster forks, 100 ladles (large), 150 creamers, 150 table casters, 100 pickle casters, 150 spoon holders, 75 syrup pitchers, 150 individual tea pots, 100 tureens (2 or 3 portions), 20 French coffee pots, 18 bowls for cracked ice, 36 toast racks, 20 steak carvers, 8 dozen nut cracks, 85 dozen medium knives, 125 dozen tea spoons, 75 dozen table spoons, 40 dozen dessert forks, 150 sugar tongs, 18 ice tongues, 200 individual ladles, 30 dozen coffee spoons (small). Private service for rooms—60 tete-a-tete coffee pots, 60 tete-a-tete creamers, 60 tete-a-tete sugars, 60 salvers for serving. Office and corridors—1 office call bell, 30 cuspidors, 1 ice water urn, 10 card trays. Bar-room—3 combination urns, 4 bar strainers, 18 ale mugs, 2 jiggers, 12 soda tumbler holders, 3 dozen bitter tubes, 1 punch bowl, 12 cuspidors, 6 liquor mixers, 12 julip strainers, 3 dozen bar stopples, 2 funnels, 12 ginger ale bottle holders, 1 bar sugar, 1 spice dish, 30 bar spoons.

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IN THE March issue of THE CIRCULAR we had something to say regarding the various "trusts" that have been formed by business men for the protection of their interests, taking the ground that notwithstanding all the complaints that were made regarding these "trusts," they were really a benefit to the community. We argued that previous to the formation of these "trusts," the various lines of business affected by them had been unprofitable because of the excessive competition that had been indulged in, and that it was always unfortunate when the capital employed in any business enterprise ceased to be properly remunerative. This was the case with the sugar and oil refiners, with the cotton seed oil manufacturers and all the other industries that have formed these "trusts." Immediately that they "pooled their issues" for the purpose of regulating competition and limiting the supply in accordance with the demand, the owners of the capital invested began to receive adequate returns upon their investments, and the business in which they were interested became prosperous. More labor was employed, better wages were paid, and the community in general was benefitted accordingly. Of course, there is danger that such combinations may become monopolistic and opposed to the public interests, but this danger is remote, for the reason that when there is so much capital seeking investment as there is at present, competition may be relied upon to prevent extortionate exactions in any line of business. It is a difficult matter for any combination to "corner the market," especially as regards industrial products, because of this natural tendency of capital to compete with capital whenever profits are in prospect. Since our issue of last month, a legislative committee of inquiry has

been investigating these various "trusts," and, contrary to expectation, found their managers generally willing to give all the facts connected with them. The public watched the investigation from day to day, and, as a result, did not appear to be at all outraged by the developments or to feel that they were victims of grasping monopolies. In the full knowledge of the facts disclosed by this investigation, we maintain our position that the community is more prosperous when all its capital and all its industries are fairly remunerative, when labor is fully employed and liberally compensated than when the reverse is true, and that when competition becomes so active and drifts so far away from correct business methods as to involve in loss those engaged in it, any combination that will bring about an improvement, converting losses into profits, is to be hailed as a public blessing. We do not apprehend any danger to public interests by reason of such combinations, for should extortion be attempted it would soon be detected, and competition would speedily take the field and remedy the evil. The country can only be really and truly prosperous when all its capital and business enterprises are fairly and legitimately remunerative.

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OUR CORRESPONDENTS continue to dwell upon that old evil regarding which so much has been said and written, viz.: selling of goods to outsiders by manufacturers and jobbers. While we would rejoice to see the jewelry business conducted through the legitimate channels, and all outsiders precluded from obtaining goods at rates that would allow them to compete with the regular dealers, we confess that we do not see how this is to be brought about. If these outsiders could be waylaid and robbed of their money, perhaps the thing would be accomplished, but so long as they have money and offer it in payment for jewelry, just so long they will be enabled to get all the jewelry they want. This is in obedience to the inscrutable laws of supply and demand, and they can no more be set aside than water can be made to run up hill by its own volition. Manufacturers, jobbers and everyone else having goods to sell at fixed prices will sell those goods to whoever comes along and is willing to pay the price. There is no sentiment in business, but the man who has the cash can always get what he wants on better terms than the one who asks time for payment, and extensions on top of the original time granted. While there are many manufacturers and dealers who will sell only to the legitimate trade, there are others who openly proclaim their readiness to sell to any one. It is simply a question of policy; one feels that he can do better in the long run by confining his sales exclusively to the trade, and so rejects all temptation that comes to him from other sources; the other says he makes goods to sell, and the oftener he can turn his money the better it is for all concerned, and that he is as willing to take the money of one man as of another. It can be reduced to a simple question of policy, and policy is governed by profit. If the retail dealers will agree to take all the goods the manufacturers can make, and to pay cash for them, we venture to say that the manufacturers would be only too glad to agree to sell to no one but legitimate dealers. But until this happy condition of things can be brought about, outsiders will be found as active competitors of retail dealers, and their numbers are likely to be increased rather than diminished. The tendency of merchandizing is towards an increase of the number of bazaars where everything almost is sold in the same establishment; where everything, both buying and selling, is on a cash basis, "quick sales and small profits" being their motto. When these bazaar men want goods and offer cash for them, they are pretty apt to get them, and on terms a little better than would be accorded to the regular dealer who buys in small quantities and wants four months time in which to pay his bills. We have said so much upon this subject that it seems somewhat threadbare, but correspondents will keep bringing it up. One of them writes us this month giving the names of certain jobbers who, he says, send out price lists to outsiders and seek their

patronage. There are so many doing substantially the same thing that it would be invidious to print any names, and, besides, it would do no good, contributing in no way to curing the evil complained of. Until men are made in some other way than at present, they will continue to do business where they find their greatest profit, precisely as, we presume, our correspondent does and will continue to do so long as he is in business.

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WHILE labor strikes are agitating the country and tending to disturb both workingmen and employers, it is well to keep in view the action that the courts are taking in the matter. In the case of the railroads that have refused to handle the freight offered to them by the Burlington road, where the engineers went on strike, in one instance the court issued an order directing the road that had refused to take the freight offered to it, and restraining the engineers of that road from striking if such freight was accepted by that road in accordance with this order. It is difficult to see how the court is to compel men to work against their will, but if a number of them combine, through the medium of the Brotherhood of Engineers to embarrass traffic, it is probable that they can be arrested for conspiracy, and if they disregard the order of the court they render themselves liable to arrest for contempt. A decision rendered by the General Term of the Supreme Court in this city is calculated to make it dangerous for workingmen to attempt to enforce a boycott in future. The case was that of O. M. Hart against John E. Gill and others. Hart's story is one of peculiar hardship and dates back to 1886, when he was employed as a foreman in the shop of Gardiner & Estes. He detected one of the men making fraudulent returns of time work and collecting wages in excess of what he earned. The man was discharged, but the Knights of Labor took up his case, demanding that he be reinstated and that Hart be discharged. The firm at first refused and a strike in their shop was ordered. After some time the firm surrendered in the most cowardly manner, discharged Hart and restored the man whom he had discharged. Hart tried to get work in other shops in this city and elsewhere, but found he was pursued by the Knights of Labor, who declared that they would drive him out of the country. Finally he brought suit against the men who were persecuting him, and they were convicted of conspiracy to injure him. The case was appealed to the General Term of the court, which, in a recent decision, affirmed the decision of the lower court. In handing down the decision of the Supreme Court, Judge Brady said: "No doubt exists of the right of workmen to seek by all possible means an increase of wages, and all meetings and combinations having that object in view, which are not distinguished by violence or threats, and are lawful therefore, cannot reasonably be condemned or justly interfered with. The claim that Hart was a 'scab' and a disorganizer, chiefly because he sought to reduce wages, should not invoke the disasters of a strike. But if this must be done to perfect an organization, or to hold it firmly together, it should end there, and not resolve itself into what the law condemns, namely, a determination that the objectionable person, the scab, so-called, should be driven away and prevented from working, even for the support of his family, within a district, large or small. This is conspiracy, pronounced, and justly so, to be criminal, and punishable by imprisonment." The case will now be carried to the Court of Appeals, with every probability of the decision being affirmed by that tribunal. Should it be so affirmed, it will be a dangerous matter for any body of workmen in future to say that others shall not do the work that they decline. No one questions the right of any man to refuse to work whenever he pleases, but when he undertakes to prevent others from working, he tramples upon individual rights that are guaranteed by the Constitution of the United States in a manner that the courts will not sanction. Under this decision, if any branch of any labor organization orders a strike, the persons issuing or complying with

such order may be prosecuted for conspiracy, and the courts have shown a disposition to deal severely with all such as are brought before them. The excesses in this direction committed by the Knights of Labor have done more than anything else to alienate public sympathy from the workingman, and to show how dangerous such organizations may become when controlled by ignorance and prejudice, or when manipulated in the interests of a few men who profit by labor disturbances. When workingmen themselves establish as the true basis of wages intelligence and competency, they will not only receive their rights, but the entire sympathy of the country. But they never can succeed in overcoming justice and reason by brute force. In view of the above decision, every workingman who belongs to a labor organization should take into consideration the question of his individual liability for the acts that may be committed by such organization.

What Shall Be Done With the Boys?



AT VARIOUS times we have pointed out the difficulty boys encounter in their attempts to learn trades, and thereby make competent mechanics and useful citizens of themselves. The principal obstacle they encounter is found in the rules of the various labor organizations, which limit the number of apprentices any employer may engage, thus not only prohibiting boys from obtaining places, but restricting the number of competent workmen in the future. These rules have been in force for a number of years, and the scarcity of

thoroughly trained workmen is already seriously felt, while the country is overrun with idle and vicious young men, who, having no legitimate means of earning their livelihood, are driven to criminal courses, become tramps and thieves, and fill our jails and criminal reformatories. This evil is becoming one of such magnitude that some definite steps should be taken for the protection of the youth of the country, to enable them to learn legitimate trades, instead of being compelled to live by their wits or criminal practices.

Mayor Hewitt is an employer of large numbers of men, and at the same time is well-known as a philanthropist and political economist of enlarged views. He recently brought this subject of apprenticeship to the attention of the public by giving to the press the following letter, addressed to a young man who had applied to him for aid:

I am in receipt of your letter of the 27th inst., in which you state that after making application to more than fifty employers to receive you as an apprentice, and having entirely failed to find an opportunity to learn a trade, you ask me to secure for you a place in which you can be instructed in some mechanical business. I am almost ashamed to say that I cannot give a favorable answer to your request. In this great city there ought to be abundant opportunity for every young man to learn a trade. Under the regulations adopted by the various trades-unions the number of apprentices is limited, so that there is growing up in our midst a large number of young men who cannot find access to any mechanical employment. This is a lamentable state of affairs, because those young men are practically turned loose upon the streets and grow up in habits of idleness resulting in vice and crime. If the action of the trades societies in this matter really limited the competition for employment which they experience, it might be defended at least upon selfish grounds; but, inasmuch as foreign workmen are free to come to this country in unlimited numbers, the only effect of these regulations is to keep our own young men out of useful employment which is freely opened to those who are born and trained in foreign countries. The

evil is of the most serious character and I trust that this statement of it may lead to a reconsideration on the part of the various trades organizations who now restrict the rights of employment, without benefit to themselves, but to the great injury of the rising generation. I shall give this letter to the press in the hope that some master mechanic who may be in a position to take you into his business may send me his address, which I will forward to you.

The aggressiveness of labor organizations is costing the country millions of dollars annually, but in no other respect are they doing so much positive injury as in denying to the boys, our coming men, the privileges they themselves enjoyed, of learning trades. When one sees the army of boys who are employed as district messengers or as office boys, wasting their time in running errands, picking up all the evil to be found in the streets, learning nothing whatever that is of value to them, or that will enable them to support themselves when they arrive at man's estate, the question as to what is to become of them naturally arises. The large cities are filled to overflowing with young men who have no trade or profession, seeking work at anything at the lowest possible wages. An advertisement for a clerk will bring applications from hundreds who have no qualifications for the place save a desire to work. They have been denied the privilege of learning a trade, and are forced to depend upon such chance work as they may be able to secure. Mechanics who have boys of their own, are forced to see them grow up in idleness because their own protective unions will not let them learn the trades that have been so helpful to the fathers.

All the industries identified with the jewelry trade are interested in this question alike with all other manufacturers, for already there is a scarcity of skilled labor in some of the departments. When the busy season of last fall was at its height, it was only with the greatest difficulty that some of the manufacturers could get out their products, and in many instances were forced to employ incompetent workmen to help them through with the rush. There is room for many more skilled workmen in the trade, at good wages, but from present indications the shortage of competent workmen promises to become more pronounced each year. The idea entertained by workmen that a scarcity of skilled workmen will have a tendency to advance wages is erroneous. When skilled labor cannot be obtained employers are forced to get along with what they can find, and they always regulate wages by the capacity of the workman. Competent men can always command good wages, but the incompetent one is sure to find his level, both as regards employment and wages.

The Lead Bath for Annealing.

TO the many "shop secrets" belongs the lead bath for annealing; the bath has to be kept in a molten condition, and can be used for many purposes; for instance, if an article thick at one end and thin at the other, is to be annealed, it is, as every mechanic knows, a very difficult operation to heat the thick end without overheating or burning the thin; but if the lead bath is heated and maintained at a certain heat, it does not matter how heavy the article is it is only necessary to immerse it in the bath sufficiently long to become uniformly heated both thick and thin parts, as they cannot become hotter than the bath. This bath is unexcelled for heating thin blades, springs, pivots, surgical and other delicate instruments, etc. If a certain place is to remain soft; for instance, the end of a spring which is to be bent or riveted, it may be drawn through the lead bath at the lowest degree at which steel may be annealed, without in the least disturbing the temper of the spring at a place where it is not to be interfered with. A great advantage in the use of the lead bath consists in the certainty that in the contraction of the steel no fracture need be anticipated, a disagreeable occurrence frequently taking place when heating steel according to the customary method and then tempering in cold water. As lead oxydizes only slowly at red

glow, two methods may be employed for largely preventing it. One consists in cooling its surface with charcoal dust or common wood ashes, and the other and better one, by setting a thin iron cover through which passes a hole, placed at convenience, float upon the lead; the article to be annealed is immersed in the bath through this hole.

The Great Labor Strikes.



JEWELRY manufacturers are as deeply interested in labor strikes as any other class of manufacturers, for their employes are, to a great extent, members of labor organizations and prepared to work in concert whenever they think the times propitious for carrying out their plans or embarrassing their employers. In those places where manufacturing jewelers are mostly located, their workmen have their own organizations, and in some instances these are affiliated with the Knights of Labor. While there is comparatively little objection to workingmen engaged in the same line of business associating together for mutual benefit and protection, it becomes a very different thing when labor of all kinds bands together to oppress employers, as is the case with the Knights of Labor. This organization claims the right to order all its members to leave their employment to enforce the demands of any other of its members who may be on strike. It could happen that the working jewelers who are members of that organization might be called upon to strike to enforce the demands of striking railroad men, coal heavers, or street car drivers. This phase of labor combinations the American people will never tolerate, but, on the contrary, will eventually crush out any organization that attempts to enforce such high-handed outrages. When the Knights of Labor compel the coal miners in one section to strike in order to secure the success of a strike of railroad men, or when the Brotherhood of Locomotive Engineers ties up half a dozen railroads by calling upon the engineers to strike to aid the striking engineers on a single road, the matter becomes one of national importance. But this is precisely what has been threatened if not actually done within the past month.

In the strike of railroad men and coal miners on the Reading railroad system, the strikers were utterly defeated, after weeks of idleness and the loss of wages amounting to hundreds of thousands of dollars. Following close upon this was the unconditional surrender of the coal miners upon the Lehigh system, after having been on strike for upwards of six months. These strikes involved enormous losses to both the men and their employers, and in the end the strikers were glad to return to work on the old terms. So great was the suffering among the families of the strikers that appeals were made to the charitable outside of the coal regions for aid. The strike of the engineers of the Burlington railroad was a most disgraceful affair, and that it was sanctioned by the Brotherhood of Engineers was a surprise to all, for that organization has heretofore been exceedingly conservative, and denied that it would resort to strikes except under the greatest provocation. But the Burlington engineers having made demands that would virtually have given them the control of the road if they had been conceded, struck when they were refused, and thus crippled for a time a railroad system

upon which eight or ten states are largely dependant for transportation of freight and passengers, to say nothing of the mails. This strike developed the fact that there exists a bitter animosity between the Brotherhood of Engineers and the Knights of Labor, the latter claiming that the Brotherhood had worked against them in former strikes, and had even sent engineers to take the places of strikers on the Reading road. In retaliation the Knights sent a large number of engineers to take the places of the Burlington strikers, so that road was crippled only temporarily. Among the threats attributed to the Brotherhood was one to the effect that if necessary all the engineers on nearly every road in the west and northwest would be ordered to strike to prevent the Burlington from defeating the strikers. When an organization has power to commit such outrages upon the public as the one threatened, it is time the government was invoked to suppress it. The immense industries of the entire country are at its mercy if it has the power it claims to have, and may be paralyzed at the will of half a dozen men. Of the many thousand men engaged in these recent strikes, it can be said that not one in ten wanted to abandon their employment, but blindly obeyed the orders of their leaders, throwing aside all regard for their own convictions and their duty to their families and their employers. Such abject surrender of one's individuality and freedom to the keeping of a few irresponsible men is the worst kind of slavery that can be imagined, and it is surprising that free American citizens can so debase themselves. In every strike thus far directed by the Knights of Labor the strikers have been ignominiously defeated after suffering losses that only years of hard work can make good to them. It would seem to be high time for intelligent workingmen to throw off this thralldom and assert their rights as men and citizens.

Indian Arts.—Gold and Silver Plate.

BY DR. BIRDWOOD, C. S. I.



THE ONLY mention of gold plate in the Rig Veda is an allusion to golden cups; but the references to jewelry are so numerous, that it is evident the precious metals must have been known and used in India for drinking vessels and other domestic utensils from the first settlement of the Aryas in the Panjab. Gold is indeed a favorite simile in the Rig Veda for the rising sun; and the wheels and yokes of carriages are described as made of gold. The Ramayana and Mahabharata offer abundant evidence that in the time when they were compiled in their present form the Hindus were perfectly familiar with works executed on the grandest scale in gold. Unfortunately no ancient objects in the precious metals that can be claimed as authentic examples of characteristic Indian art have survived the wreck of time in India; unless any may still be hid within the shrines of some of the more sequestered of the great idol temples.

The oldest examples of really ancient gold and silver work found on Indian soil are the gold casket [Plate 1] and silver patera [Plate 2] belonging to the India Office library, which have been lent to the Science and Art Department for exhibition in the India Museum at South Kensington. This gold casket is an object of the highest interest in connection with the history of Indian art. It was found by Mr. Masson about forty years ago in one of the Buddhist topes, built on the sandstone slopes which stretch away westward from Jellalabad in the Cabul Valley toward the Lughman hills. It is fully described and figured in Wilson's *Areana Antiqua*, 1841, and it is figured also in Mrs. Spiers's *Life in Ancient India*, 1856. The tope in which it was found is known as No. 2 of Bimaran. Dr. Honigberger first opened this monument but abandoned it, having been forced to hastily return to Cabul. Mr. Masson continued Honigberger's pursuit, and in the center of the tope discovered a small apartment, constructed as usual by squares of slate, in which were found several most valuable relics. One of these was a good-sized

upon which eight or ten states are largely dependant for transportation of freight and passengers, to say nothing of the mails. This strike developed the fact that there exists a bitter animosity between the Brotherhood of Engineers and the Knights of Labor, the latter claiming that the Brotherhood had worked against them in former strikes, and had even sent engineers to take the places of strikers on the Reading road. In retaliation the Knights sent a large number of engineers to take the places of the Burlington strikers, so that road was crippled only temporarily. Among the threats attributed to the Brotherhood was one to the effect that if necessary all the engineers on nearly every road in the west and northwest would be ordered to strike to prevent the Burlington from defeating the strikers. When an organization has power to commit such outrages upon the public as the one threatened, it is time the government was invoked to suppress it. The immense industries of the entire country are at its mercy if it has the power it claims to have, and may be paralyzed at the will of half a dozen men. Of the many thousand men engaged in these recent strikes, it can be said that not one in ten wanted to abandon their employment, but blindly obeyed the orders of their leaders, throwing aside all regard for their own convictions and their duty to their families and their employers. Such abject surrender of one's individuality and freedom to the keeping of a few irresponsible men is the worst kind of slavery that can be imagined, and it is surprising that free American citizens can so debase themselves. In every strike thus far directed by the Knights of Labor the strikers have been ignominiously defeated after suffering losses that only years of hard work can make good to them. It would seem to be high time for intelligent workingmen to throw off this thralldom and assert their rights as men and citizens.

globular vase of steatite, which, with its carved cover or lid, was encircled with inscriptions scratched with a style in Bactro-Pali characters. On removing the lid, the vase was found to contain a little fine mould, mixed up with burnt pearls, sapphire beads, etc., and this casket of pure gold, which was also filled with burnt pearls and beads of sapphire, agate, crystal and burnt coral, and thirty small circular ornaments of gold, and a metallic plate, apparently belonging to a seal, engraved with a seated figure. By the side of the vase were found four copper coins, in excellent preservation



BUDDHIST RELIC CASKET

having been deposited in the tope freshly minted. They were the most useful portion of the relics, for they enabled Professor Wilson to assign the monument to one of the Azes dynasty of Græco-Barbaric kings who ruled in this part of India about 50 B. C. The upper and lower rims of the casket are studded with Balas rubies, in alternation with a raised device resembling the *sir-vatsa*, or curl on the breast of figures of Vishnu and Krishna; and between these jewelled lines the whole circumference of the casket is divided into eight niches, enshrining four figures represented twice over. The niches are formed by a series of flat pilasters supporting finely-turned arches, circular below and peaked above, between which are figures of cranes with outstretched wings. The whole is executed in the finest style of beaten [*repoussé*] goldsmith's work. Like all the Buddhistic remains found in the Panjab and Afghanistan it is strikingly Byzantine in its general character; and the storks and cranes with outstretched wings in the spaces between the arches in which the apostle-like figures are niched, recall at once the figures of angels carved in the spaces between the arches in Christian churches. Yet in drawing attention to this remarkable relic in a letter in the *Pall Mall Gazette* of June 3, 1875, written on the subject of Dr. Leitner's collection of Buddhistic sculptures from the Panjab, which were then on exhibition at the Albert Hall, I maintained that it afforded clear evidence of the influence of Alexander's invasion on the arts of India. The Greeks had conquered all this part of India, and established a monarchy there, and issued a coinage which was at first purely Greek in its character. In *The Indian Travels of Apollonius of Tyana* [Priault], about A. D. 50, he is related to have found Phraotes, who ruled over what of old was the kingdom of Porus, not only speaking Greek, but versed in all the literature and philosophy of Greece. The villagers of a neighboring kingdom—somewhere in the Panjab—are also said to have still used the Greek language. There may be the grossest exaggeration in all this, but it proves at least that such statements were the commonplaces of Indian travel in the first century of our era. The conclusion therefore is that the remarkable European character of the Buddhistic sculptures in the Panjab and Afghanistan, is due, not to Byzantine but to Greek influence; and it is confirmed by the discovery of this casket. They are unmistakably Buddhistic sculptures, and therefore may date from B. C. 250 to about A. D. 700; and any of them which are later than the fourth century, A. D., may have been executed under Byzantine influence.

But the date of this golden casket proves that its Byzantine and mediæval look is due to greek inspiration; and the probability is that the Buddhistic remains existing in the neighborhood of Peshawar in the Panjab were also directly influenced by Greek art; and may, some of them, therefore be of an earlier date than is usually admitted. Dr. Leitner was the first to insist on describing them as Græco-Buddhistic sculptures. Their resemblance to the Byzantine ivories, as of this casket to Byzantine goldsmiths' work, is probably due to their having been executed by Indian workmen from Greek designs or models. It will be interesting to observe that the peaked arches represented on this casket are identical in character with the peaked arches of the upper part of the piazza of St. Mark's at Venice, which was restored I believe in 1592. The bottom of the casket is ornamented with a beautiful conventional representation of the sacred lotus with eight petals, which are pointed like the arches of the eight niches above them.

The silver patera has been fully described and figured by me in vol. xi., New Series, of the *Transactions of the Royal Society of Literature*. It was also described and figured by Prinsep, in vol. vii. of the *Transactions of the Asiatic Society of Bengal*; and is mentioned and badly figured in Sir Alexander Burnes' *Cabool*, 1843. Colonel Yule gives a woodcut of it in the second edition of his *Marco Polo*. Sir Alexander Burnes figures along with it a second silver dish of Persian work, representing Yezdigird I (A. D. 632), which is described by General Cunningham in vol. x of the *Journal of the Asiatic Society of Bengal*. This second dish is said to be still in the possession of the Burnes family, and would be an invaluable addition to the few objects of historical Indian art in the India Museum. The patera belonging to the India Office Library had been an heirloom in the family of the Mirs of Badakshan, who claim to be descendants of Alexander the Great; and it had been sold by them in their extremity, when they were conquered by Mir Morad Bey of Kunduz, to Atmaram his Dewan Begi. It was from Atmaram that Dr. Lord obtained it, and the Persian dish also; and he presented the patera



ANCIENT SILVER PATERA.

to the India Museum, and the Persian dish to Sir Alexander Burnes. The diameter of the patera is 9 inches, its depth $1\frac{5}{8}$ inches, and its thickness $\frac{3}{8}$ to $\frac{1}{16}$ and $\frac{1}{20}$ of an inch; and its weight 29 oz. 5 dwt. Troy. It represents in high relief, with all the usual adjuncts of classic mythology, the procession of Dionysos. The god himself sits in a car drawn by two harnessed females, with a drinking cup in his extended right hand, and his left arm resting on the carved elbow of the seat on which he reclines, or it may be the shoulder of Ariadne. In front of the car stands a winged Eros holding a wine-jug in his

left hand and brandishing in his right a fillet, the other end of which is held by a flying Eros. A third Eros is pushing the wheel of the carriage, behind which follows the dancing Heracles, recognized by the club and panther's skin. Over all is a rude and highly conventionalized representation of a clustering vine; and in the lower exergue a panther is seen pressing its head into a wine jar, placed between the representations of some tree, possibly a pomegranate, arranged symmetrically on either side of it.

The figures, which show traces of gilding, are all encrusted on the surface of the patera, and the heads of the Dionysos and Heracles are both wanting. It is in the style of the later Roman and Byzantine ivories; and on the face of it, from the thickness of the silver, especially in the raised figures, its debased drawing and slovenly workmanship, it belongs to an age when Greek art had, under the various degrading influences to which it was exposed during the Roman and Byzantine period, gradually become barbarized. I have no doubt that this patera is of Eastern workmanship, possibly of colonists from Rome; and we may conjecture it to have been taken among the spoil when Antioch fell to the Persians, A. D. 540. It may, however, be ancient Indian work of Bactria of the same age as the Buddhist sculpture of Peshawar, which it closely resembles in its manner of composition and modeling.



CHASED GOLD VESSEL, CASHMERE.

The Panjab has ever maintained a traditional reputation for the excellence of its gold and silver plate. The best known is the parcel gilt work of Cashmere, which is almost confined to the production of the water vessels or *sarais*, copied from the clay goblets in use throughout the northern parts of the Panjab. Their elegant shapes and delicate tracery, graven through the gilding to the dead white silver below, which softens the luster of the gold to a pearly radiance, gives a most charming effect to this refined and graceful work. It is an art said to be imported by the Mongols, but influenced by the natural superiority of the people of the Cashmere valley over all other Orientals in elaborating decorative details of good design, whether in metal work, hammered and cut, or enameling or weaving. Cups are also made in this work and trays of a very pretty four-cornered pattern, the corners being shaped like the Mahomedan arch. Among the Prince of Wales' Indian presents there is a tray with six cups and saucers in "ruddy gold," which is an exquisite example of the goldsmiths' art of Cashmere. The Prince of Wales also exhibits at Glasgow a remarkable candelabrum in silver gilt from Srinagar, shaped like a conventional tree and ornamented all over with the crescent and flame device and hanging fishes, its design being evidently derived through Persia from a Turkoman original. The candelabra in Hindu temples constantly take this tree form, without the addition

of the symbols of the sky and ether; and trees of solid gold and silver, representing the mango or any other tree, and of all sizes, are common decorations in Hindu houses. Often they are made of silk, feathers and tinsel, and they always recall to mind the *terpole* or golden vine made in ancient times by the goldsmiths of Jerusalem. Josephus [*Antiquities* xiv., 3], informs us that when Pompey came to Damascus, Aristobulus sent him out of Judæa a great present, which was a golden vine or garden, which the jews called *terpole*, the "delight."

Plate 3 is an example of unusual form of Cashmere work, in parcel gilt and "ruddy gold." This "ruddy gold" is used in India, only in Cashmere, and outside India proper, in Burma. All over India elsewhere, gold is stained deep yellow, except in Sindh, where the goldsmiths and jewelers sometimes give it a singular and highly artistic tinge of olive brown.

Training Schools for Watchmakers.



THE SUBJECT of establishing training schools where ambitious young men can learn the watchmaker's trade is one that has been frequently discussed but no practical solution of it has ever been reached. Within the past year or two several private watchmakers have announced their willingness to impart instruction to a limited number of young men, and have arranged their shops with a view to accommodating them. We do not know anything about these private schools beyond what their proprietors say in their announcements, and hence have not endorsed them in any manner. We presume they accomplish all that is promised, and that the pupils will be thoroughly instructed so far as the one teacher is capable of instructing them. But this is not what the trade requires and ought to have. There should be established at some convenient point a school of instruction where a large number of young men could receive a complete course of instruction in everything pertaining to the mechanical branches of the jewelry trade. It is not merely watchmakers that are required, but skilled workmen, competent to do all classes of work that come into the shops of the ordinary dealers. The workmen most sought for are those who can sit at the bench in any shop and do all the various kinds of work that come in. They must be able to repair watches, make any portion that may be required, mend jewelry, repair opera glasses, fit spectacles, and do any of the thousand and one jobs that come into the hands of dealers daily. Such a school of instruction should be a trade matter, one in which all are interested, and to the maintenance of which all should contribute. In all the prominent cities there are organizations of jewelers, and they might well take up this question of establishing such a school. By co-operating these several organizations could interest nearly every manufacturer and jobber in the land, and also make the established retail dealers contributing members. It would not require a very large sum of money to start such an enterprise, and in a very short time it would become self sustaining, if it was deemed desirable to carry it on upon that basis. The first thing would be to secure a proper location for such a school, provide the necessary tools and instructors; this would not require a large sum, and when the school was once established, there are hundreds of young men in the country who would be glad to avail themselves of its advantages and pay a reasonable sum for tuition. Such a school should not only teach the mechanical part of the trade, but also impart instruction in the artistic branches. Pupils should be taught drawing and designing, engraving, diamond cutting and, in fact, everything pertaining to the jewelry and kindred trades. If the jewelers' associations of New York and Chicago would co-operate with the Boards of Trade of those cities, Providence and elsewhere, we believe the necessary funds could be speedily raised to carry into effect any approved plan for such a

school. We had hoped that some good to the trade might result from the art classes that have been established in connection with the Metropolitan Museum, but this does not seem to have been the case. Indeed, that project does not seem to have been particularly successful thus far in anything but breeding dissensions between the promoters and the instructors. We believe that with a fund of \$25,000 a satisfactory school of instruction could be established, and that by the time the fund was exhausted the school could be self sustaining. In view of the growing scarcity of really skilled workmen, something should be done towards replenishing their ranks, and the only possible way to do this is, apparently, to establish a school of instruction.

Ownerless Gems.

IN THE bond vault of the treasury at Washington is a quantity of diamonds and other precious stones which have a queer history. Indeed, the facts relating to some of them are scarcely known, and their history is largely a matter of tradition. Their value is variously estimated at from \$50,000 to \$100,000. There is a bottle, four or five inches long, filled with glistening diamonds, and, besides these, a large number of separate stones of various kinds. Some of them are set in beautiful gold ornaments, intended for personal wear. Most of them have been in the custody of the treasury officials for forty-five years. These were sent to President Van Buren, in 1839, by the imam of Muscat, a country of Asia, as a testimonial in recognition of some service to that country by his administration. Just when it was nobody appears to know. Van Buren could not accept them for himself—although it was the desire of the donor that he should do so—by reason of the clause in the constitution which forbids any person connected with the government accepting any present or decoration from any foreign power or potentate. To have returned them would have been an insult to the royal giver, and what to do with them was a question that puzzled the presidential mind. They were finally turned over to the treasury, and there they remain unto this day. The entire collection has accumulated in a similar way. Other presents were sent to government officers by kings and princes who had not read the constitution of the United States, and nothing could be done with them except to stow them away in the vault. They do not have any definite owners, and they bear about the same relation to the government that unclaimed packages do to an express company. The treasury people have long been in a quandary as to what disposal to make of them. Two or three times in years past the matter has been brought to the attention of congress, but no action was ever taken.—*Eclectic Magazine*.

The Security Alliance.

WE related last month the circumstances of the robbery of the store of Chapman & Gale, of Norfolk, Va., and the recovery of their goods through the action of the Jewelers' Security Alliance. The following letter from that firm indicates their appreciation of the work done in their behalf by The Alliance:

To the officers of the Jewelers' Security Alliance, New York:

GENTLEMEN.—Thanking you for the valuable assistance and counsel rendered us at the time of the burglarizing of safe on the night of February 5, we with pleasure now state that, through the influence exerted by your association, all the goods taken at that time have been recovered, the cash, amounting to \$1,000, alone being retained by the invaders.

Had we been members of the Jewelers' Security Alliance, with its certificate displayed in full view of the burglars, they would have no doubt said, "Too many for us," and unceremoniously left unmolested.

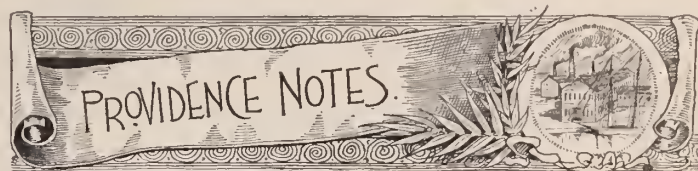
By not taking advantage of the protection offered by the Alliance

to its members we find ourselves considerably out of pocket and regret exceedingly that we were not members long ago.

We would most earnestly recommend the Security Alliance to the whole jewelers' trade, more particularly to those who are not now members, with the full assurance that if they will connect themselves with the Alliance they will have no cause in the future to regret it, more particularly if they should meet with a like misfortune as ours of February 5.

Again thanking you, gentlemen, and assurance of our hearty co-operation with you hereafter, we are yours very truly,

CHAPMAN & GALE, Norfolk, Va



There has been no material change in the business prospects of the trade with the manufacturing jewelers either pro or con during the past month over that of January, and the amount of business transacted may be safely placed at about (75) seventy-five to (85) eighty-five per cent. of that done during the same time in 1887. This relates to the live business houses of the trade; small concerns have hardly done (50) fifty per cent. of the amount of business of one year ago, and already much complaint and dissatisfaction is heard from them. Every cloud (it has been claimed by learned philosophers) contains a silver lining, but the clouds that have floated over those who have employed their time in the manufacture of jewelry during the past month have noted that these clouds have not had silver linings, but of the darkest hue of lead, proving the old saying to be a myth and a snare to those pinning their faith to it. Jobbers have not (in the experience of the oldest of the manufacturers) placed orders more conservatively or with more caution than that which has marked the present season; in fact some of them would not place an order unless the manufacturer would guarantee the sale of the goods, which would resolve itself at once in consigning the goods, and as the manufacturer does not care to do his business that way, he was obliged to turn all such would-be customers down, and forego the pleasure or displeasure of carrying them for another year, or at least lend them capital with which to do business. Competition has been too close the past few years to do anything of this kind on a very extended scale without blocking the game and the manufacturer himself coming to grief in the end. Lent has had a bad effect on the jewelry business, together with the uncertainty of what will be done in Congress with the all-absorbing subject called "tariff-tinkering," and the Western strikes, and those in the Pennsylvania anthracite coal regions, and the general dullness of business throughout the country, as shown by the greatly decreased bank clearances seem to be good reasons for the present depressed state of affairs.

Mr. Charles Z. Read, late with Messrs. Hahn & Co., importers of precious stones, has severed his connection with that house, and has associated himself with Mr. R. A. Kipling, as manager of his Providence house, and interests in this country. Mr. Read has a wide acquaintance with all the manufacturers throughout New England, and being well liked by all, will prove to be the right man in the proper place. Mr. Kipling will be located in Paris, and do all the foreign buying as formerly.

Mr. Alfred Barton, Jr., of Brooklyn, N. Y., who represents Messrs. Ostby & Barton, of this city, suffered severe loss by fire on Sunday the 12th ultimo.

Mr. Wm. R. Dutemple was elected Grand Representative at the

45th annual meeting of the Grand Lodge of Odd Fellows of the state of Rhode Island, held recently.

Mr. Chas. S. Pine, of Messrs. C. S. Pine & Co., has brought a suit in the Supreme Court of N. Y., for \$10,000.00 damages against the Providence and Stonington Steamship Co. Mr. Pine having been a passenger on the Steamer "Stonington" at the time she was in collision with the Steamer "Narragansett" some six years ago, he was in the water nearly five hours, and claims that his health has been seriously impaired ever since. He has engaged as his counsel Mr. George Carleton Comstock, and will prosecute the suit vigorously.

Mr. Frank L. Cottrell, formerly connected with the "Manufacturing Jewelers Board of Trade," has entered the employ of Messrs. Wm. C. Greene & Co. as salesman. Mr. Cottrell is a young man of good habits and has made many friends during his engagement with the "Board of Trade," who wish him success in his new position.

Mr. Wm. H. Waite, of Messrs. Waite, Thresher & Co., left on Tuesday, for San Francisco. He was accompanied by his daughter, as his wife and son preceded him some time since. Mr. Waite expects to spend about three months away from Providence and anticipates a very pleasant time.

Mr. Walter Gardiner, of Messrs. D. Wilcox & Co. has caused an attachment to be served on the property of Mr. A. F. Lewis which is located in these "Plantations."

Mr. Chas. F. Irons, accompanied by his sister, has started on a pleasure trip through the "Sunny South." At last accounts they were rusticated at Aiken, S. C. They expect to be away several weeks and anticipate much pleasure on their sojourn.

Mr. Chas. P. Gay, book-keeper for Mr. Chas. Downs, has fully recovered from his late indisposition we are glad to say, and, is feeling in better health than ever.

Mr. Arthur W. Chatterton, formerly engaged in the jewelry business, in this city, has taken to journalism, and, located at Central Falls. Success to him.

The following well-known jewelers, with their wives, were noticed attending the "Infantry Ball" on the 14th ultimo: Mr. Fred. I. Marcy; Mr. Ralph Hamilton, Jr.; Mr. George H. Holmes.

Mr. Colwell, of Messrs. Atwood & Colwell, has been confined at home for some time, by sickness, but, is now fully convalescent, we are pleased to inform his many friends.

Mr. C. H. Woodward has been forced to locate in more commodious quarters and, has therefore moved from Dorrance St., to No. 160 Westminster St., where he has greatly increased facilities for the prosecution of his business.

The former co-partnership which existed between Mr. Edward J. Ellinger and James Carolan has been dissolved by mutual consent.

Messrs. Bugbee & Niles, successors to Messrs. C. E. Smith & Co., have been elected to membership in the "Manufacturing Jewelers Board of Trade" as well as Messrs. W. & S. Blackinton.

Messrs. C. A. Russel & Co. have recently filled one order of some 250 Odd Fellows badges, to be worn at the Grand Encampment at Kansas City, Mo.

Ex-Alderman Joseph H. Fanning, of Messrs. Fanning & Potter, has been elected Treasurer of Fraternity Council No. 57, N. A.

"On Dit" that Mr. Nathaniel S. Grant has rented his old shop at No. 111 Broad St., and will re-fit it and commence business again in a few weeks, and with his experience of years in the jewelry business, should make a decided success.

Mr. M. Fitzgerald has sent his cheque for \$100.00 to swell the fund of the "Providence Firemen's Mutual Relief Association" which would be pleased to hear from more of such public-spirited citizens in the jewelry business as Mr. Fitzgerald has shown himself to be, by his very liberal donation, which was much appreciated by the association.

Mr. Isaac Hale, of No. 64 North Main St., was visited on Friday evening last by a snatch-thief, losing two valuable diamonds, worth

about \$300.00. The rings he had on memorandum from a dealer, so will have to make the loss good to the owners. Mr. Hale being an octogenarian, he was unable to follow the thief, who, being very nimble-footed soon made good his escape, but the police have expectations of soon being able to locate him, and placing him in durance vile.

The co-partnership which formerly existed between Messrs. G. W. & H. J. Gaunt, colorers and enamelers, has been dissolved by mutual consent, the business will be continued as formerly, by Mr. H. J. Gaunt, at the old number.

Mr. Frank E. Comey, of No. 111 Broad St., has closed out his business to Messrs. Lane & Possner. Mr. William R. Lane was, for several years with Messrs. R. G. Dunn & Co.'s Mercantile Agency.

The manufacturers who were recently burned out in the great fire, have located in different parts of the city, wherever they could find quarters to accommodate them in their business requirements, and have already commenced business again. Messrs. Wm. H. Robinson & Co. estimate their loss at \$45,000.00, on which there was an insurance of \$15,000.00, the contents of their safes, on being opened, were found to be uninjured. They have bought the machinery, and leased the shop formerly occupied by Mr. Charles S. Pine at No. 108 Eddy street.

Messrs. J. A. Charnley & Co's loss is put down at \$28,000.00, with an insurance on same of about \$8,000.00, they have secured quarters at No. 118 Dorrance street. The contents of their safes, on being opened were found to be well preserved.

Mr. H. H. White thinks that his loss will foot up to about \$6,000.00, and carried no insurance whatever on either stock or fixtures, making his loss total.

Messrs. M. L. Read & Co., estimate their loss at \$10,000.00, which was insured for \$2,500.00. The firm has dissolved by mutual consent Mr. Thomas C. Hudson the retiring partner having located at No. 129 Eddy street, the style of the new firm being Thomas C. Hudson & Co.

Messrs. Clarke & Turner's loss figured up to about \$4,000.00, insured by Messrs. Starkweather & Shepley for about \$1,500.00. They have located at No. 119 Orange street.

Messrs. W. S. Hough, Jr. & Co. were insured for \$15,000.00. They have located at No. 77 Westfield street, and are in good running order again.

The Barker Manufacturing Company estimate their loss at about \$9,000.00, on which there was an insurance of about \$5,500.00. They have located in quarters at No. 38 Friendship street, and are all ready to continue their business as heretofore.

Messrs. W. J. Bradley & Co. place their loss at \$4,500.00, and were insured for about \$2,500.00. They will very likely continue in business.

Messrs. W. A. Beatty & Co's loss is estimated at about \$45,000.00, they had an insurance on same of only \$10,000.00. They have arranged to buy out the machinery and fixtures of Mr. C. I. Richards at No. 119 Orange street, and are filling all orders as fast as received.

At the "Rhode Island Yacht Club" banquet held at the Narragansett Hotel on Monday evening, the 27th ultimo, at which Mr. Edward Burgess the yacht designer was a guest, were present the following well known Manufacturing Jewelers: Mr. Hiram Howard of Messrs. Howard & Son; Messrs. J. D., J. L. and J. L. A. Fowler of Fowler Brothers; Mr. B. E. Daggett of Messrs. B. E. Daggett & Co. and Mr. R. Bradley.

The regular monthly meeting of the "Jewelers Board of Trade" was held at the rooms of the association No. 9 Wilcox building on Monday afternoon, Vice-President F. I. Marcy, occupying the chair, in the absence of President Dutée Wilcox, no business of any importance was transacted at the meeting.

Mr. Dutée Wilcox is at present rusticated amongst the orange

groves of Florida, and refreshing himself on the sweet perfume of the orange blossoms, and trying his hand at shooting some of those ugly "Gators" which infest Black Creek just below Magnolia on the St. John's River.

Mr. R. Eppstein the able representative in America of the well known firm of Messrs. Veit & Co., of Gablonz, Bohemia, was in the city recently and placed some flattering import orders.

Messrs. Tillinghast Mason & Co., of No. 111 Summer street, have placed upon the market for the spring trade a fine line of gold goods in new and tasty designs, which should meet with a ready sale.

Mr. Wm. R. Dutemple of the firm of Messrs. Wm. R. Dutemple & Co., has been re-elected Grand Representative from Rhode Island to the Sovereign Grand Lodge I. O. O. F.

Messrs. Foster & Bailey are making a great push this season on their "Mount Hope" Sleeve Buttons, and have lately sent a case of them to Japan, where they expect to create a great demand for them, and open up a market for American jewelry.

Mr. James H. Bashford connected with the firm of Messrs. M. Fitzgerald & Co., of Eddy street, on the road west, has returned after an absence of several weeks, and reports times as flourishing in the solid gold goods line. Mr. Bashford makes three or four Western trips during the spring and fall seasons.

Mr. R. A. Kipling will sail per the fast and elegantly appointed steamer "La Bourgogne," of the "French Line," for Paris via Havre, on the 24th inst., "bon voyage."

Mr. A. A. Du Bois, formerly with Messrs. Wm. M. Fisher & Co., has associated himself with Messrs. Wm. H. Robinson & Co., at No. 108 Eddy street.

Messrs. Foster & Bailey are reported to be running on short time eight hours per day, due to the depression in the jewelry business, and the want of orders.

Mr. Oscar Stahl has been indisposed for the past few days, but his many friends will be pleased to hear that he is rapidly convalescing, and hopes to soon be around as well as ever.

It is currently reported that Messrs. W. H. Robinson & Co., lessees of the Chace & Arnold block (destroyed in the great fire) will erect a building on the site, something similar to the one destroyed, but more fire-proof if it is possible to do so.

Fire broke out about 7 p.m. Tuesday evening in the large jewelry establishment of Messrs. C. G. Bloomer & Sons, the building being constructed of wood, it was soon reduced to ashes, the loss on which is estimated at \$40,000, and carrying an insurance of \$17,000. Messrs. Bloomer & Sons have decided not to rebuild at the old place Pawtuxet, but to remove to the city of Providence, where the facilities in a case of fire, are considered to be of the best. Mr. Bloomer formerly, and for many years did business here, and his removal to Pawtuxet was occasioned by its demand for more commodious quarters, and although sympathizing with him in his great loss, his many friends welcome him back.

FAIRFAX.

Providence, R. I., March 15th, 1888.

Prize Essay on the Balance Spring.

[By MORITZ IMMISCH.]

Continued from page 50, March, 1888.



WE bend a piece of metal and try to bring it back to its former shape, it will be bent in a different place; everybody knows how difficult it is to straighten a pin when it has been bent. If a spring has been bent and it is forced back to its original position, the elastic force will be diminished at the point so forced. The mere fact of bending it in the first instance has an effect detrimental to its elastic quality. It is, for instance, well known to watchmakers, and may have found it out to that trouble, that the bending of a gong wire in a repeating watch, in order to free it from any point it

touched, diminished the sound considerably, and heating the spring would only partially restore the tone. The best way to proceed in such a case is this: If the spring touches on the outside and must consequently be bent inward, it should be, at the place where it is to be bent, laid upon a convex piece of brass corresponding in shape with the inner side of the spring; then if the outside be slightly hammered with the sharp edge of a hammer, the small indentations produced will cause the outside to be lengthened a little and the inside to contract in proportion. The change of form will be very gradual, and the granular disturbance, being spread over a larger area, will not be great enough to effect the tone in the least. The more a spring is bent to and fro in any direction, the more it will lose its elastic force. It is for this reason that a beginner will often spoil a spring by over manipulation, making it ultimately unfit for isochronal purpose, especially is soft springs. Care should be taken to make any change very gradually, and rather oftener than too much at a time, and thereby necessitating the bending back of the spring. If quite a soft spring, perfectly adjusted, should be bent and brought back again to exactly its former position, the vibrations would be isochronous no more, and by repeating the experiment the elastic force of the curve will become so small compared with that possessed by the body of the spring, that instead of exercising a control over the latter, its motion becomes subservient to it. A harder spring will bear a much greater amount of over manipulation, and a Brequet spring, the form of which in itself necessitates a certain amount of bending, must almost have a greater degree of hardness than that necessary for helical springs, in order that the advantage possessed by this form should be of the greatest possible use. It is also necessary that a certain time should elapse before ascertaining the result of the change effected.

All metallic bodies possessing some degree of elasticity do not if forced into different shape, retain the newly required shape exactly, but have a tendency to return in some small measure toward that shape from which they have been forced. The reactionary force becomes gradually less active, until, after a time, it ceases altogether. The time required for the shape to become permanent differs greatly with the degree of elasticity. This time will be greatly shortened by the application of heat, and also by imparting some small motion. A great variety of experiments may be made to prove the existence of this most curious phenomenon.

A gong in a repeating watch, after the tone has been spoiled, will, after a time, especially if the watch is made to strike frequently in a small measure improves its tone. This improvement will take place at once and in a greater degree if heat is applied.

There is no form more favorable to the display of this tendency than that possessed by balance springs and the acting parts of a compensation balance. If a compensation balance, is bent outward rather considerably, and the rate be noted down, say, after the first half hour, and compared again, somewhat later, say, after six hours, it will be found that at the second observation the rate is somewhat accelerated. While this change is taking place in the balance spring the isochronism is affected in a manner which is very deceiving, because it is not continuous. To bring this feature more directly under the observation the following experiment can easily be made. Bend a part of mainspring (of about six inches in length) excessively, not by short bends in different places, but by a continuous twist between the fingers, and then bend it back again gradually, and by short bends, in different places till it forms a straight line; then fix one end firmly on a table, with its sides vertical to the plane of the table in such a manner as to allow the free end to vibrate freely in a horizontal direction; fix a small weight to it at a convenient distance; in order to make the vibration observable, mark the position when in rest by fixing a pin into the table outside the spring, and two other pins at equal distances from the spring. If the spring is inflected in that direction from which the last change has been effected in making it straight till it touches the pin, it will, on being released, not reach the opposite pin by far; in being as much inflected the other

way and released, it will either reach the opposite pin, or at least approach much nearer to it, which proves that the resistance which the spring opposed to the momentum of the weight is greater on one side than on the other. Something of this kind takes place (of course, in a very much smaller measure) in the balance spring after it has been altered, and it would be quite useless to ascertain the permanent effect of a change before the lapse of a certain time. In the case of a hard spring in a chronometer, a time of about three or four hours should be allowed.

In adjusting the spring of a watch in long and short vibrations, the short ones must be made to gain upon the long when placed horizontally, because it will be found that in the vertical positions the vibrations are smaller on account of the increased friction on the pivots, and the watch will lose; this retarding influence varies of course with the proportion the friction bears to the momentum of the balance, and must be compensated for in order to obtain good performance. In the case of marine chronometers, only the retarding influence of the thickening of the oil comes into consideration, and it has been found best to make the short vibrations gain upon the long ones about 6' in twenty-four hours when the arcs are reduced from one and one-quarter to three-quarters of a turn. The opinions of chronometer makers differ as to the amount, and will always remain a weak point. Very often we find that, without any assignable reason, the oil corroded on some pivots much more than on others. In fact, it is seldom that we find the thickening taking place quite uniformly, and if it takes place more on the pivots of the wheels than on the pivots of the balance, the rate will be accelerated, and *vice versa*. There is no doubt that the use of constant power escape-ments would do away with this difficulty, whatever may be the objections against them in other respects.

There is a peculiarity of balance springs which is as important as it is vexatious, and which is the greatest obstacle in the way of correct time-keeping. It is their different performance in different temperatures.

All bodies expand in heat and contract in cold, and if that was all in the case of a balance spring, it could easily be compensated for; but we find that, beside its getting longer, its elastic force also changes considerably in different temperatures. These changes take place in an increasing ratio, and this ratio itself varies and increases, with the degree of hardness possessed by the spring. The compensation balance commonly used to correct this error in the spring is also irregular in its motions, inasmuch as when the rims bend inward the weights proceed more directly toward the center, and have a greater effect than when they bend outward; and, although, this circumstance tends to lessen the fault produced by the spring, it does not do so sufficiently, especially with hard springs. If, therefore, a chronometer is adjusted in the middle temperature, it will lose in both extremes. If adjusted for one extreme, the fault will be greater in the other. These irregularities combine to make the subject of compensation in heat and cold a very intricate one. The present essay has only so far to do with it as it involves certain properties of the spring.

By what has been said, it would appear that in determining the degree of hardness in a spring, we have to choose between two evils.

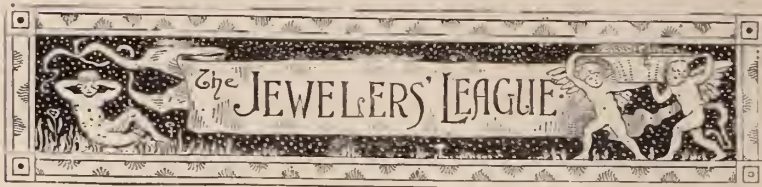
A soft spring will be too short lived, and a hard one will be too capricious in its tendencies. The best plan therefore in this case is to choose a medium between extremes, and here practice and experience offer a helping hand.

There are different modes of making springs.

Common springs are made of hard drawn steel or gold wire (the latter variety being seldom met with), and the procedure is extremely simple. The wire is wound up and tightened with screws to a form corresponding to the size the spring is intended to have. The spring being tightened down, is subject to a heat of such a degree as would cause steel to turn blue after which it will retain its shape; but

springs so made are not very durable compared with steel springs hardened in fire, and therefore the latter made is preferable. The manipulation is also very simple.

(To be continued.)



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THE JEWELERS' CIRCULAR is the *exclusive* official paper of the Jewelers' League and has been selected for the publication of all matters of interest pertaining thereto. Letters or inquiries pertinent to its business or purposes, and which might interest the trade or inquirers, will herein be answered. Address *Jewelers' League, Box 3,444, P. O., New York*, or the office of THE CIRCULAR.

At the regular monthly meeting of the Executive Committee, there were present Vice-Presidents Lewis and Bowden, and Messrs. Howe, Greason, Jeannot, Jenks and Sexton.

Seven changes of beneficiaries were granted, one application was referred for correction, and the following applications were admitted.

Josiah Clift, Jr., Baltimore, recommended by J. R. Armiger;
R. F. Fricot, Brooklyn, N. Y., recommended by F. L. Carrow; Chas. E. Mather, Brooklyn, N. Y., recommended by Jno. C. Day; F. C. Park, Kent, Ohio, recommended S. D. Mills; Paul A. Willemmin, Providence, R. I., recommended by H. Huestis.



The jobbing jewelers of Chicago approach the spring trade in excellent spirits, though hardly with the expectation of seeing last year's phenomenal business repeated. Jewelers, like most other shrewd business men, realize that a presidential year occasions more or less uncertainty in the country, that is not conducive to the material advance of business interests. Chicago jobbers appreciate the fact to a nicety, and are cheerfully making up their minds for the inevitable. The first three months of 1888, according to the reports of nearly all the leading houses, will, however, bear favorable comparison with the showing of the same period in 1887. Nearly every jobber claims that he is a "little ahead of last year," but does not venture to predict that the same state of matters will be maintained during the entire year. The strike of the Burlington engineers and firemen has interfered to some extent with the business done by jobbing jewelers over the territory reached exclusively by the "Q" road, but very little complaint is heard on this score. The fear that

the strike may possibly spread to other roads has, however, had a somewhat depressing effect on business generally, but as yet it has not told materially on the jewelry business.

Another matter which has had especially a depressing and unsettling effect on the retail trade, is the present relations between Mr. Dueber and the Manufacturers' and Jobbers' Associations. Many retailers claim that there is a distinct hardship in not being able to buy movements without cases, while others assert that the trouble is more apparent than real, as the retailer needs to carry more cases than movements any way. The retail trade meanwhile is buying sparingly and apaiting further developments.

Benj. Allen & Co., Otto Young & Co., Norris, Alister & Co., Lapp & Flershem, Giles, Bro. & Co. and all the other leading houses, report encouraging business. They have all their travelers out on the road, and satisfactory sales are being made. Some of the jobbers don't exactly like the new regulation about selling movements only with cases, but they are trying to put the best face possible on the matter, and inspire confidence in the retailers.

Stein & Ellbogen have just extended and refitted their store at the northeast corner of State and Madison streets. The walls and ceiling have been tastefully re-papered, all the woodwork has been treated in light oak, the gas fittings have been renewed, and altogether the store is now one of the brightest and trimmest in Chicago. The firm reports business for March as at least fully up to last year's average.

Mr. L. S. Grout, of the Excelsior Sign Co., reports business "booming." He is shipping his "Father Time," "Nonpareil" and "Louis XIV." watch signs to all parts of the United States, Canada and Mexico, and is still keeping up his trade with the Sandwich Islands. Mr. Grout has recently gone into the tool business, and is now producing polishing lathes, watch racks, screw-drivers, ring mandrels, countershafts, wire benders, staking tools, anvils, riveting stakes, foot wheels and an endless variety of other useful goods. Mr. Grout claims that all his tools are made of the very best metal, and he has started out the new departure with every prospect of success.

The United States Jewelers' Guild has at last got out its long-expected watch. The movements are all 18 size, quick train, with safety pinions, conical pivots, mean time screws in balance and fit the standard 18 size cases. The movements are manufactured by the Aurora Watch Co., under a special contract with the Jewelers' Guild.

Lapp & Flershem have secured a lease of the entire building above the first floor, on the northwest corner of Washington and State streets. This they propose to immediately re-model, and hope to move into their new quarters before May 1. As their new location will give them light on three sides and 1,000 feet more floor space than they have in their present quarters, they are to be congratulated on making such a lucky move.

Mr. C. D. Peacock, the well-known retailer, has renewed his lease of the store on the ground floor of the building at the northwest corner of State and Washington streets. He will pay a rental of \$17,000 for the next eight years—an advance of \$3,000 on his previous rent. With Lapp & Flershem above, this should be a busy corner.

The Western Silver Plate Co. and the Gilbert Clock Co. are making extensive improvements on their headquarters at 54-56 Madison street, which will materially increase their business facilities and add to the attractiveness of their premises.

H. F. Hahn & Co. have made an addition to their force of travelers, and are sending out exceptionally fine lines of goods.

Mr. D. M. Hughes, who has for some time done a successful retail business at 3,169 Archer avenue, has moved to Wichita, Kas.

Mr. W. Davis, a valued employee of Otto Young & Co., returned from his honeymoon trip to Minneapolis and St. Paul early last month. His bride hails from Oscaloosa, Ia.

The study of optics has induced Mr. William S. Fowler, of the firm of E. S. & W. S. Fowler, opticians, of this city, to complete a full medical curriculum. Mr. Fowler's name appears among the list of graduates of the College of Surgeons and Physicians, who received their M. D. diplomas on February 28. Ophthalmologists will now be at a discount.

Mr. John H. Mather, who has been for many years with Benj. Allen & Co., was agreeably surprised early in the month with the presentation of a silver berry dish and spoon, oxidized and gold lined, by the employees of the firm.

The Elgin National Watch Co. is having very brisk business, being scarcely able to keep up with the demand.

The Aurora Watch Company claims to have sold 14,000 watches during the month of February. The company has now 252 names on its pay-roll, and looks upon the issue between Mr. Dueber and the Manufacturers' and Jobbers' Association as a circumstance that will distinctly favor the demand for its movements.

Mr. Charles F. Lesser, who does a large city trade in tools and material, has moved to 168 State street, where he has established himself in quarters with Mr. J. H. Purdy.

Mr. D. H. Brookins, of Chicago, has gone out of the jewelry business.

The new horological school at La Porte, Ind., which owes its origin and success to Mr. J. R. Parsons, of that place, was formally opened on March 1. At 3 o'clock in the afternoon the students assembled at their new rooms, where, after prayer by the Rev. Dr. Kendall, Mr. Charles Olin, the Secretary of the Ohio department of the Jewelers' Guild, delivered an interesting address on practical watchmaking, and the advantages to be derived from such a school as that originated by Mr. Parsons. In the evening many of the leading citizens assembled at the rooms, when the formal opening address was made by ex-Mayor Mortimer Nye. Addresses were then delivered by Mr. William F. Nye, of New Bedford, Mass., the watch oil king; Mr. J. H. Purdy, of Chicago; Mr. T. D. Jones, one of the instructors of the school, and others.

Mr. Sol. Bergman, who for some time has been manager of the material department of Mr. Max Meyer, Omaha, Neb., has commenced business for himself in materials and jewelers' findings in the same city. Mr. Bergman was in New York in the beginning of March buying goods.

Mr. Shortess, of Traer, Ia., has bought out the business of Mr. L. W. Pierce, of the same place.

Mr. C. Vanderlip, of Elkhart, Ind., has sold out to Mr. A. E. Grimes.

Mr. John Koelting, of Evansville, Ill., has moved to St. Genevieve, Mo.

L. B. Davis and Mrs. J. Mayer, of Indianapolis, and W. L. Bovee, of Grand Island, Neb., C. E. Collins, of Fairfield, Neb., N. S. Lane, of Eyota, Minn., C. H. Taimer, of Belvidere, Ill., C. N. Cook, of Hay Springs, Neb., and Le Compt & Tretz, of Stockton, Kas., have gone out of business.

Mr. C. W. Haen, formerly of Bloomington, Ill., has opened up business at Findlay, O., with an elegant stock of new goods.

Morse & Blanchard, of Elgin, Ill., have sold out, and are now on the outlook for an eligible location.

Mr. A. B. McKelvey has removed from Monroe, Wis., to Hastings, Neb.

Among the deaths in the trade reported during the month are those of J. Graf, Englewood, Ill.; W. B. Douglas, San Francisco; J. H. Helehen, Van Buren, Ark.; E. C. Oroson, St. Paul, Minn.

Among the jewelers from a distance who visited Chicago during the month were: A. J. Warner, Minneapolis; E. Goldberg, Manistee, Mich.; Frank Schard, Danville, Ill.; W. N. Boynton, Manchester, Ia.; Charles Gogle, Brookins, Ind.; S. J. Moyer, Chamberlain, Dak.;

L. H. Pagdam, Colorado Springs, Col.; George W. Chatterton, Jr., Springfield, Ill.; William H. Vail, Valparaiso, Ind.; J. Watts, Racine, Wis.; N. Willis, Palmyra, Wis.; J. E. Daily, Necedah, Wis.; J. G. Mines, Norfolk, Neb.; H. J. Vincellet, Hebron, Ill.; L. S. Young, Youngstown, O.; J. Lewis, Maquoketa, Ia.; Herman Huesgen, Devil's Lake, Dak.; J. W. Burkitt, Arlington Heights, Ill.; R. G. Matthews, Atchison, Kas.

W. A. B.



* A Complete History of Watch and Clock Making in America.

[By CHAS. S. CROSSMAN,]

Number Twenty-two.

Continued from page 74, March, 1888.

THE WASHINGTON WATCH CO.



AS REALLY a project of Mr. J. F. Hopkins, who was probably better known in the trade as the inventor of the famous Auburn-dale Rotary Watch. But as he did not become actively connected with that company and was anxious to engage in a manufacturing enterprise, he interested with him Messrs. A. C. Richards, R. D. O. Smith and George S. Prindle, all of Washington, under the name of the Washington Watch Company, expecting later to incorporate under that title. Mr. A. C. Richards furnished the greater part of the capital.

A room was rented and a small amount of machinery was built for them by Mr. John Stark of Waltham, and Mr. Richards with a few men commenced in a small way and finally succeeded in making some forty or fifty watch movements. They were key wind three-quarter plate with a duplex escapement.

This is about the extent of actual achievement, but what they intended to do would no doubt fill a much larger volume. The money invested was all absorbed and the project subsequently entirely abandoned. Previous to this scheme of Mr. Hopkins' he had made about a half dozen fine movements by hand which are mostly carried in Washington.

THE BOWMAN WATCH.

This watch was so called after Mr. E. F. Bowman, a native of Lancaster, Pa., where he has always resided. In March, 1879, he left the employ of the firm he was with and opened a retail watch and jewelry business at 106 King street.

He also had an ambition to make a watch movement of superior quality on his premises and so leased at the same time the loft over his store for factory purposes.

He took into his employ at this time Mr. William H. Todd, under whose supervision they were to be produced. Mr. Todd severing his connection for that purpose with the Lancaster Watch

Company, to join which, as superintendent, he had previously come from Elgin.

As he is so intimately connected with this particular project, as well as with the early history of the industry, it does not seem out of place to give a short sketch of him in this connection. He began his life as a watchmaker by practising on watches in his home in Burlington, Sullivan county, New York, where he was born in 1834. He went to work at the business as an occupation at fifteen years of age. Our space forbids that we follow him in all his subsequent travels in South America, England and Cuba and also this country, but we wish to speak briefly of Mr. Todd's experiments in connection with discovering a process of hardening and tempering hair-springs. While it cannot be said he carried it on to final and complete success he probably did as much (except it be Mr. Jas. Bottom whose process was kept a secret) as any other one man to lay the foundation for what now is considered a comparatively simple thing, viz, the hardening and tempering of steel hair-springs. His early experiments while in the employ of Messrs. E. Howard & Co. were contemporaneous with those of Mr. John Logan, since of "hair-spring fame," and Mr. Chas. Van Woerd, subsequently superintendent of the American Watch Company. He was afterwards in the employ of the Elgin company thirteen years, going from there to Lancaster as alluded to above.

Mr. Bowman fitted up the loft as a shop and put an engine in the basement for power. He purchasing a small amount of machinery from Messrs. Hart & Sloan of Newark, N. J., most of which had been the property of the defunct United States Watch Company. The smaller tools required were made by Mr. Todd. The movement was also modelled by him and was original. His long experience as modelmaker with the Elgin company serving him to good advantage in producing it. The movements are all nickel, 16 size, three-quarter plate, full jeweled in gold settings including the centers. The escapement which is full cap jeweled, is as near as may be a copy of the escapement used in the Charles Frodsham English watch, having of course a star tooth escape wheel. The stem winding is on the yoke principle with some modifications from the usual form used in American watches. So much for the model.

Parts of three hundred movements were commenced, the dials being made elsewhere and the balances imported from England.

After two years and three months hard work on the part of Mr. Todd assisted by three or four workmen, fifty watches were nearly completed, a few being wholly so and adjusted. These performed very satisfactorily, but Mr. Bowman found his other business increasing, and desiring to engage exclusively in the wholesale trade and not wishing to be burdened with a manufacturing interest, he found a purchaser for the plant in Mr. J. P. Stevens of Atlanta, Ga.

Thus the manufacture of the Bowman watch in Lancaster came to an end.

Mr. Bowman subsequently removed to 20 East Chestnut street, where in connection with a partner he is at present located.

Problems in the Detached Lever Escapement.

BY DETENT.



RECENTLY I had my attention called to the fact that very many good workmen on American and Swiss watches have a great bother and even a dread of English levers, especially of the full plate kind. One young man asked me how I could determine the pallet action of an English lever when there was no "peep holes" through the lower plate as have the American watches. I replied none were needed, that a man who properly understood the lever escapement could set and regulate every action of an English lever escapement as well from the outside as he could if he had 20 peep

holes. This to him seemed incomprehensible. I then took the trouble to talk to several others of the craft and found only one who knew how to test and set an English lever escapement, and he even did not have the entire plan. We have two essential points to look to in such an escapement and these are pallet and roller actions. Now we will commence with the pallet action, putting the scape wheel and pallets with their staffs into the depthing tool and testing for depth; this is determined by gradually closing the centers together at the same time turning the scape wheel *backward* with the tip of the finger. As soon as the scape wheel will revolve no more, give the closing screw a slight advance to open the tool, until the scape wheel will turn again (backward). Now turn the depthing tool up end wise and look at the pallet action. The centers of the depthing tool holding the pallet staff should be pressed in to create a slight friction on the pivots of the pallet staff. At Fig. 1 is shown the idea. The cut is only a rough drawing to explain the action. Suppose we wish to test the lock of the entrance pallet, we turn the scape wheel slowly looking downward between the centers of the depthing tool, and let the back of the tooth *d* gently press the exit pallet *B* outward in the direction of the arrow *e*. As soon as the tooth *d* has passed the outer angle of the tooth *B* we reverse the direction in which we turned the scape wheel, turning it in the direction of the arrow *f* and see if the proper amount of lock for the tooth *e* is established on the pallet *A*. Repeat this operation with every tooth as the teeth may be irregular. Then reverse the order letting the tooth *e* move the pallet *A* back and see if the tooth *d* locks properly on the pallet *B*. Of course it is understood that the directions I gave for setting the depthing tool admits of variation. I only gave these directions as tending to find the correct depth quickly. In depthing pallets it is best to let the depth be as shallow as is consistent with safety. The depthing tool is now tried to the pivot holes in the plate where the scape wheel and pallet staff go to see if correct. It requires some considerable skill to use a depthing tool as it should be used; one thing is very important and that is to hold the tool perpendicular to the plate. If one of the holes is larger than the other select the larger hole to insert the tool center in; pulling the center out a little so the one you are to sweep the pitch circle with just touches the plate when the tool is held square and upright. The scape wheel and pallet staff should be removed before trying to use the tool to test depths with, or in handling these might be injured. There is another method of testing the depth. Put the watch together leaving out the main spring barrel and the balance. Now set up the maintaining power and with an oiling tool, or a slim pointed piece of peg-wood, move the lever away from the banking pins. But here is a difficulty—a great many workmen bend the banking pins of English levers away from the lever. Why, I never got hold of a man who did so could explain why, but they seem to think this course is safer. Before doing anything to an English lever it is best to straighten the banking pins perfectly before putting together to test as above described. As stated above move the lever away from the banking pin against which it rests and if it does not unlock before the fork has passed one-fourth of the way to the opposite banking pin, it is evidence there is too much lock, or the form of the pallet is bad. Pass the fork over to the opposite banking pin and again try how far over the lever has to be carried before it unlocks, using the one-fourth distance test. Now gradually bend the banking pins in until the tooth in contact will not escape. Then bend the pin away again until the teeth will just escape all around; proceed in the same way with the other banking pin. If now the lock on each pallet is a trifle short of one-fourth the space you can rest assured the pallets are very near correct. Next comes the roller action; remove the hair spring from the balance staff and put the balance in place, if the jewel pin (first see if the jewel pin fits the fork) passes freely in and out of the fork. If it does it is strong evidence the roller action is all right. Strictly to test the roller action we should close the banking pins as we did to ascertain if the pallet action was correct,

because if the pallet was closed in so a tooth could not escape, neither should the jewel pin pass out of the fork on that side. If this test is applied to the fork on both banking pins and the jewel pin holds in the fork, or it requires force to make it pass out we are satisfied our escapement is very near right, because when testing the pallet action we found the same conditions to exist when the banking pins were bent in. In new English levers of the cheaper grades the banking pins are not always set as they should be, but sometimes are too wide to allow for a fault in some of the actions. As for instance the fork is not set at the proper angle. I mean by this that when the pallets are banked so as to give the proper lock, the jewel pin will not pass out on one side, consequently the banking pin on that side is bent away so it will. This is not the way to do; when we find a case of this kind, the fork must be moved relative to the roller. To do this the fork is best filed narrow just back of the guard pin, as shown at *D*, Fig. 2, and then bent at this point to correct the error. The correction is known when the jewel pin will pass in and out of the fork freely as described above. In testing the guard pin, the rule is, the roller table should turn free of it, and it should strike the roller before either of the pallets unlocked. In case either of the banking pins have to be bent to correct banking fault, they should be bent so as to present a surface parallel to the end shake of the lever, as shown at *g*, Fig. 3. Any person who will study the instructions given will not have much trouble in correcting an English lever escapement.

The Tariff Issue Raised.



RESIDENTIAL elections usually make a rather dull season for trade, and in past years, when Congress has indulged in tariff tinkering, trade has been depressed. This year both these evils come together, as it seems inevitable that the question upon which the two great political parties are to divide is the tariff issue. Already the congressional committee that has had the matter in charge has reported a bill proposing numerous changes in the duties on imported articles, mainly reducing the tariff as a means

of preventing the further accumulation of surplus in the treasury. None of the changes suggested in any way affect, we believe, the jewelry trade, nor is there much likelihood that any such changes will be made at present. Jewelry is looked upon as a luxury that, when imported, should pay as much duty as it can possibly stand. The agitation of the tariff question this year will probably be more active than ever before, and during the presidential campaign every man will be expected to define his position upon the subject. It is generally understood that the republican party favors protection, and that the democratic party is in favor of free trade. This classification is altogether too broad, and if the issue is made on this line of demarkation, there will follow a complete reorganization of parties, for not all republicans are protectionists nor all democrats free traders. Upon this issue men will make their principles conform to their interests, and will vote with that party that promises to best serve them in a pecuniary way. Manufacturers generally do not care to see foreign goods placed in this market free of duty, as they claim that they cannot compete with them in price because of the

cheaper labor used abroad in their manufacture. The protectionists contend that free trade would inevitably degrade labor in this country and bring the workingmen down to the social level of the workingmen of the old country, reduce wages to the same basis, and bring nothing but suffering to those who have to earn their living by the sweat of their brows. On the contrary, the free traders claim that by removing the duty on foreign-made goods the workingmen will be able to buy the necessities of life at lower rates, and to live with less labor. They also maintain that while protection may have been desirable to nourish our infant industries, these have passed through their juvenile stages and are now full fledged and able to walk alone; that they are competing with the products of the old world in more than one foreign market, and can certainly do the same at home. While it is not probable that the proposition for the entire abolition of duties on foreign products will be brought forward immediately, the reductions now under consideration will cause the matter to be extensively discussed, and every man should take occasion to inform himself thoroughly upon the subject, for it is one that is to occupy public attention for some time to come.

Obituary.

HENRY S. JONES.

Henry S. Jones, recently a traveling salesman for D. C. Percival & Co., of Boston, died on March 1st of a paralytic stroke. He was fifty-three years of age, a native of Dumbarton, and for twenty-five years had been in the employ of D. C. Percival & Co. He was married in his youth, but his wife died shortly afterwards, and for over twenty-five years he had been a widower. He was a warm-hearted, kind and generous man; a good salesman and a gentleman. His sudden death from a paralytic stroke, from which he suffered once before, during the past summer, was a severe shock to his many friends.

CHARLES T. GROSJEAN.

Charles T. Grosjean, of Tiffany & Co., died on February 23d, at Hamilton, Bermuda, whither he had gone in quest of rest and a change from the busy life in the silverware factory of his firm. He was forty-seven years of age, and learned the silversmith's trade with his father, of the late firm of Grosjean & Woodward. He soon made his mark and became very adept in his art. He was admitted into his father's firm, and about twenty years ago was offered a position with Tiffany & Co. as superintendent of the silverware branch of their business. He was very devoted to his art, in which he achieved distinction, being spoken of as one of the best living decorators of silver. He overworked himself, however, and when his physician got him to consent to go to Bermuda it was already too late, and he died two days after landing there. His remains were brought to New York for interment.

GEORGE W. SIMONS.

George W. Simons, senior member of the firm of Simons, Bro. & Co., of Philadelphia, died on Thursday, March 15, of Bright's disease. Mr. Simons was born in Philadelphia in 1819, and when a lad learned the trade of pencil and thimble making. When he became of age he started into business on his own account, and by industry and perseverance soon built up a prosperous business. About twenty-five years ago he bought the property where the firm's factory now stands, and built the present structure in the place where formerly stood the old Jones hotel.

For many years Mr. Peter P. Simons, now of San Francisco, was a

partner with his brother under the name of George W. Simons & Bro., but subsequently Mr. Peter P. Simons withdrew. Of late years four sons of the deceased have been associated with him in the business, which is now one of the largest in Philadelphia. The firm employ two hundred and fifty men in the different branches of the business.

Mr. Simons has been prominent in social circles of Philadelphia, and was well-known in the trade and highly respected. He held several public positions at different times during his life, and for twenty years has been a ruling elder in the Greenhill Presbyterian church.

Mr. Simons leaves a widow and six adult children. The funeral was held on Monday, the 19th of March, the interment being in the Laurel Hill cemetery.

ROBERT BOYD.

Robert Boyd, one of the oldest jewelers in Brooklyn, died on the 15th of March after a long illness. Mr. Boyd was of Scotch-Irish parentage, born in County Antrim, Ireland, and came to America about forty years ago. He soon established himself in the jewelry business on Court street, Brooklyn, where he did a very good business until last May, when failing health obliged him to retire. He gained a large local reputation, and in the trade was widely known. He was honest and industrious, shrewd and quick witted, and his wit and humor were a part of his nature which will be held in remembrance by all who have known him.



A Lady's Rambles Among the Jewelers.

WEDDINGS and other festivities interrupted in the fashionable world by the advent of Lent are again in order, and a few words concerning wedding presents will doubtless be appreciated.

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FIRST in interest, very naturally, are the gifts from the bridegroom, or the marriage "corbeille," as the French put it. These include, when circumstances permit it, heirlooms in form of family silver, jewels and laces. In nine cases out of ten, however, in this country veritable heirlooms are wanting, and in their place is supplied modern jewelry more or less valuable, according to the financial standing of the prospective bridegroom. Gem jewelry plays an important part at weddings in high life. Solitaire ear rings, if the bride to be is not already furnished with the same, a necklace, a bracelet or brooch, in fact, any one of the many beautiful and costly trinkets that make life bright to womankind are permissible. A true-lover's knot, made of loops of small diamonds, is often given by the bridegroom to the bride for the purpose of fastening on the bridal veil. This furnishes a sentimental souvenir of the occasion, which may afterwards be employed as an ordinary brooch.

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NEAR relatives of both families usually supply the silver, especially the table silver, that is to grace the home of the newly wedded pair. Friends outside of the immediate families have wide license given them in the selection of wedding gifts. Following are a few of the many articles in silver appropriate for the purpose: *Tete-à-tete* services for black coffee; bon-bon boxes of crystal in silver mounts;

lorgnettes of silver; oxidized silver opera glasses; vinaigrettes; silver-mounted toilet articles; perfume bottles of silver in fluted pattern or else enameled or studded in rococo fashion. Silver bound prayer books are also popular as wedding presents.

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A *tete-à-tete* service seen recently consisted of an antique-shaped coffee pot, sugar basin and cream jug, corrugated and edged with a border of raised flowers. Small cups and saucers of Dresden ware completed the service. At a recent New York wedding the six bridesmaids gave the bride a silver casket, silver candlestick, a bouquet holder, a Dresden china jewel box and a tea urn.

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THERE are many tasteful presents in silver at a comparatively small cost, and designed for modest pocketbooks. Numbered with these are silver *repoussé* button hooks, engraved trays for hair pins, paper knives and book markers combined in silver and in gold, pocket bonbonnières and silver pens and pencils.

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PAPER knives and book markers, by the way, are very popular articles, and these have assumed an interesting variety of shapes, including, among the rest, swords, knives, trowels and the like, with handles of ivory, silver and mother of pearl. Large knives of ivory and tortoise shell, with elegantly embossed silver handles, are also in request as presents.

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BEFORE dismissing the subject of weddings, some of our more elderly readers may be interested to know that, according to New York etiquette, the correct form of invitation for a golden wedding is the simple card or note paper with "Golden Wedding" in the corner. Gold lettering is gone out of fashion. It is proper to say "no presents" if you choose.

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CLOSELY associated with weddings are formal dinner parties given both before and after marriage, by the friends of the bride and bridegroom. In France the present fashion for dinner tables is for the linen to be embroidered in colors, the china painted with flowers, the glass engraved and mounted in silver, and quantities of flowers and plants in decorative baskets and bowls. The fancy has also been developed for a variety of colored shades for lamps. In New York these fashions are more or less observed. The glass for the dinner table is often of many colors and apparently covered with gems. Old Dutch silver is thought to be an accession, and consequently has been reproduced in some of the modern productions.

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A SET of silver plate varies according to the taste or means of the owner. It may include ten pieces or six, or any number between these figures. Styles and prices vary with the taste of the design and the amount of labor employed. With new patterns have been noted several in fine engraved work. In both silver and plate occur the quilted satin finish, with fluted top and burnished bands. Very attractive effects are gained with engraved figures on satin finish, with a bright band at top and bottom of the article. Both the curved and the perpendicular fluting remain popular. The latter provides what is familiarly known as the "melon" shape. This melon shape appears popular in spoon holders and sugar basins.

NEW YORK up-town houses have a good trade for separate coffee urns. These urns come in various shapes and styles, being round, fluted, low and broad, cup-shaped or with straight sides. All are provided with handles and a faucet, and rest on high standards, with a spirit lamp underneath. *Tete-à-tete* sets, including coffee pot, tea pot, sugar bowl, cream pitcher and tray, are good selling articles. The same may be said for dessert sets of three pieces, namely, sugar bowl, cream pitcher and spoon holder. These sets are very desirable when showing a combination of glass and silver. Silver berry sets which will soon be in demand, are out in curved fluted style; the center dish is for fruit, while on either end of a silver base is a cream pitcher and sugar bowl.

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TOAST racks figure among breakfast conveniences and so do egg stands. Some of the latter seen were shaped similar to a large dinner caster, the egg cups appearing in place of bottles.

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CRACKER jars of glass in silver mounts are both pretty and convenient, and the same may be said for the marmalade jars in decorative porcelain similarly mounted.

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ART work in metals for room decoration, always appreciated by English folk, is coming on apace in this country. It includes decorative objects in silver, bronze and hammered iron, and takes on the forms of brackets, tripods and candlesticks.

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AT THE beginning of the winter season THE CIRCULAR told its readers that some of the Washington and New York ladies were wearing with evening dress two necklaces, one close about the throat, collar fashion, the other below it, falling over the corsage in front. Recent Paris correspondents allude to this fashion among French and English women. They also make it appear that long ear rings for which our own manufacturers have not as yet found a paying demand, are being worn. Baroness Alphonse de Rothschild has the credit of setting the fashion with some notable sapphires.

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WITH the fashion for white and gold rooms has come a fancy for gold embroideries on ladies' evening toilets. Quite naturally this fancy for bold coloring has brought gold jewelry into the foreground among ladies who heretofore have worn it quite sparingly. This gold jewelry consists in combs and pins of gold, pretty gold chate-laines to which are attached a number of pretty trinkets, gold pencil cases and small gold watches.

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THE employment of decorative hair pins, combs, aigrettes and other ornaments is as popular as ever. Feather aigrettes, with a sprinkling of brilliants, are seen. Not a few ladies wear in their evening coiffure, pins, brooches and even jeweled necklaces, placed hap-hazard among the coils and braids of the hair.

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A NOVEL way of displaying handsome gemmed finger rings, which are lost to view under gloves at evening entertainments, is to pass strands of hair through them, and to fix them in effective positions by means of invisible hair pins on the top of the head. These do

not look at all like finger rings, but present clusters of gems studded in the tresses here and there.

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IN JEWELRY there are many new designs, among which may be mentioned bracelets and necklaces of fine chain gold, with large hook and eye of diamonds; a dandelion flower pin glittering with diamonds; a small gold fir-cone brooch with diamond stalk; a pendant of diamonds representing a cockatoo on its perch, five pearl daisies set in a row as a bar pin, with single ones for ear rings.

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NUMBERED with new diamond flowers is the chrysanthemum. Very pretty spray pins noticed lately, include a spray of gold hazelnuts with diamond leaves, and a gold branch on which rests a bird's nest made of silver wire and containing three little gold eggs.

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GUARDED pin brooches with a letter, a name or some little animal's head in gems, or gold wire bangles in the same style, are fashionable. Occasionally in place of a letter or animal's head appears a pearl harp or two diamond hearts interlaced. This latter, by the by, is known as the Marie Stuart brooch.

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QUITE a number of novelties appear in imported bracelets. Among these is the gold snake pencil bracelet, in which the snake makes two coils about the arm, finally wrapping itself over a gold pencil on top, the pencil being attached to the bracelet by means of a tiny gold chain and the eyes of the snake being represented by small gems. Occasionally the bracelet is represented by two snakes, the heads of which come together on top of the arm. Very pretty pencil bracelets, in both gold and silver, are made with a hollow coil to which are attached three rings that serve as a receptacle for the pencil attached when the latter is not in use.

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A NEW gold padlock bracelet, which contains a real lock and key, is formed of double gold rope, the ends of which are interlaced and held secure by the padlock.

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QUITE new in bar pins are those composed of a heavily chased bar from which hang pendant an odd number of gold balls or pearl drops. A very pretty bar pin seen was formed of heavily chased double crescents. Crescent ear rings were shown to wear with this pin.

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WE HAVE now not only the Marquise ring, but the Marquise brooch. This, as the name implies, consists of gems set in a pointed oval shape.

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AN ATTRACTIVE gem-set ring is composed of two shanks, held together on top by two diamonds, set slanting, and on either side of these diamonds two large whole pearls.

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GOING back to brooches, a novel one consists of a gold horseshoe, the nails of which are represented by diamonds, while a diamond

fox head fills in the center of the shoe. Another diamond horseshoe and fox head brooch seen was mounted on two gold crops placed at right angles.

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A NEW style in studs is represented by a large Oriental pearl set high and surrounded by a border of small diamonds.

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GENERALLY speaking, men are wearing a great deal of jewelry, though good dressers are careful that their jewelry is inconspicuous and in taste. For evening dress, shirt studs are, as a rule, three small jewels lightly set. Pearls are, perhaps, the preference, though rubies and diamonds are fashionable. Plain gold studs are also much worn.

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MANY men are wearing with both day and evening dress short watch chains of gold, the heavy linked ones being a popular sort.

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GEM-SET scarf pins, which good dressers reserve for their afternoon suits, may be composed of a solitaire pearl or other single gem, or it may be a cluster pin. A single opal or a star sapphire in a gold mount represents a fashionable scarf pin. Fine cat's-eyes are also employed for the same purpose.

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MEN are wearing rings again on both the third and little finger of the left hand.

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NUMBERED with newest styles in fans are the "Lady Teazle" and the "Prince of Wales" fans. The latter is composed of three long ostrich plumes and a soft curling bunch of tips mounted in an ivory or a mother-of-pearl handle. Jewelers are interested in these fans for two reasons—they are attractive goods to keep in stock and then the handles are inlaid with gold monograms, when not studded with gems.

ELSIE BEE.

Catalogue Dealers.



CCASIONALLY we receive letters from subscribers in distant parts of the country inquiring as to the reliability of certain firms in this city who send out catalogues. One of those inquiries came to hand last month, and to give an idea of the nature of the inquiry we give it, without of course mentioning the names. Mr. A, of Texas, writes to the editor to know whether B & Co. of New York, are a good house to buy from. "They send me a handsome catalogue," continues Mr. A, "which contains a full list with illustrations of jewelry, watches, clocks, silverware, etc., and offer these goods at very low prices."

Mr. A further says that B & Co. say that they are "regular jobbers," and do all their business on a cash basis; and that they are thus enabled to sell their goods very low.

NOW THE CIRCULAR has sent representatives to such houses as B & Co. to see if they really were what they claimed to be. Their offices are not in the popular jewelry region, but generally away in some little out of the way building near to the Lane. Their offices are usually away in the upper stories of such buildings, and they

generally have no stock. A bookkeeper and an office boy comprise all the working force of such establishments, and they confess to have no city trade. None of their customers ever come to see them, but they claim to do a very large business through the mails.

It is hardly necessary to remark that THE CIRCULAR is not a mercantile agency, or that it cannot afford to investigate the credit of firms like B & Co. But it is well to remind our readers that such a business as that carried on by B & Co. is not worthy of their support or encouragement. B & Co. are not "regular jobbers." They are unknown to the different associations of manufacturers and jobbers, and do not obtain goods at manufacturers' prices. It would be well for all small jewelers in the country, who are the ones usually made the victims of such firms, to make it a rule to buy all their goods of houses that are well-known.

In buying goods of a jobbing firm of established reputation, the small dealer can feel certain he is not being imposed upon. And the names and addresses of all well-known houses can be found in the trade journals and not in individual catalogues. Don't buy goods of a house you have never heard of until you learn something about the persons comprising it. Houses that are well-known can and do sell at as low prices as those who are unknown, and it is always a safer plan to buy from people with established reputations.

B & Co. have a catalogue filled with beautiful illustrations of watches, clocks, jewelry and silverware; but they are in the same order of illustrations with the pfize watches and jewelry advertised in country papers to be "given away for five dollars in postage stamps." B & Co. are not to be trusted. If Mr. A wants to buy reliable goods let him order of respectable firms whose names appear in THE CIRCULAR, and when he receives a catalogue from some unknown house, let him use it to start his fire the next morning.

The Jewelers' Security Alliance.

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For further information, Application Blanks for Membership, By-Laws, etc., Address
P. O. Box 3277. 170 Broadway, New York.

The regular monthly meeting of the Executive Committee was held at the Alliance office on Friday, March 9. There were present Vice-President Untermeyer, J. B. Bowden, Chairman, W. C. Kimball, Treasurer, and Messrs. Alford, White, Kroeber and Secretary Champenois.

The following applicants were admitted to membership:

L. G. Burnham & Co., 71 Church street, Burlington, Vt.; S. G. Brooks, 120 Dudley street, Boston, Mass.; David F. Conover & Co., 12 N. Second street, Phila., Pa.; A. F. Martin, 151 N. Eighth street, Phila., Pa.; Marshall Bros., 17 Merchants' Row, Rutland, Vt.; L. F. Arnold, 51 Church street, New Haven, Conn.; Otto Offenhaeuser, Tarrytown, N. Y.; Jacobs Brothers, 1229 Pennsylvania avenue, Washington, D. C.; Julius A. Weiss, 101 Dexter avenue, Montgomery, Ala.; Randolph H. Boynton, 547 Congress street, Portland, Me.; Wheeler & Son, 149 W. Broadway, Salem, N. J.; B. L. Swezy, 5 Worth street, Middletown, N. Y.; R. P. Thorn & Sons, 78 State

street, Albany, N. Y.; Wallace B. Wilcox, 30 Genesee street, Utica, N. Y.; Henry E. Eckert, 211 Broadway, West Troy, N. Y.; Henry Dutcher, 3 Front street, Pert Jervis, N. Y.; Rudolph Garmenthaler, 128 Main street, Barnesville, Ohio; Geary & Weale, 117 E. Baltimore street, Baltimore, Md.; Edwards & Lee, 300 Main street, Buffalo, N. Y.; Geo. Schaffner, 210 Woodward avenue, Detroit, Mich.; Edward I. Salmson, 460 Fulton street, Troy, N. Y.; Ingomar Goldsmith & Co., 20 Maiden Lane, City; Jacob W. Grubb, cor. 12th and Market streets, Wheeling, W. Va.

Practical Hints on Optics for Skilled Opticians.

[By C. A. BUCKLIN, A. M., M. D., NEW YORK.]



THE MOST prominent subject of the day which is at present engaging the attention of all who are in anyway interested in studying the numerous causes of weak vision is *the ocular muscles*. The world moves with most commendable regularity in its diurnal and yearly movements, but all classes of individuals in the world are very spasmodic and irregular in their mental flights. Every period of time is specially devoted by specialists to thoroughly running some one subject into the ground. The ophthalmic portion of the world's population is now engaged in considering the subject of asthenopia (weak vision), and its secondary effects, which are caused by abnormal conditions of ocular muscles. Each eye has six muscles

fastened to the surface of the eye-ball, for the purpose of producing the necessary associate movements of the eyes in all possible directions. The primary requirements of comfortable bi-nocular vision are, both eyes must be direct at exactly the same point under all conditions, without making any excessive demand on any one ocular muscle sufficiently large to produce muscular fatigue.

The ocular muscles *the superior recti muscles*, which move the eyes directly upward.

The inferior recti muscles, which move the eyes directly downward.

The internal muscles, which move the eyes directly inward toward the nose.

The external recti muscles, which move both eyes directly outward.

The superior and inferior oblique muscles have a peculiar action.

The superior oblique, when acting singly, throws the eye downward and outward.

The inferior oblique, when acting alone, throws the eye outward and upward.

Both oblique muscles, acting together with the external rectus muscle, carries the eye directly out.

A slight paralysis of one of these muscles causes individuals to hold their heads in grotesque positions.

A paralysis of one of these muscles causes double vision, or diplopia.

A weakness of any one of these muscles causes muscular asthenopia, and, according to enthusiastic writers, muscular asthenopia can cause any nervous disease.

Strange positions of the head, due to slight paralysis of an ocular

muscle, are explained as follows: The superior recti muscles are paralyzed, the muscles no longer move the eyes upward as desired; the individual therefore carries his eyes up by throwing his head back. This habitual position of the head gives to the public the idea that the individual is conceited and affected.

Paresis of the inferior recti muscles make it impossible for the individual to rotate the eyes downward, consequently the individual overcomes the difficulty by habitually carrying the head down. This gives to the public the impression that the individual is melancholic.

Paresis of the internal or external recti muscles cause the individual to carry the head turned directly to one side.

Paresis of an oblique muscle causes the individual to carry the head to one side, and downward or upward, as the superior or inferior oblique is the affected muscle.

Double vision, or diplopia, is the result of a paresis of an ocular muscle which can not be compensated for by a change in the position of the head.

We judge of the position of all objects by the direction of the light which comes from the object. Having two eyes, there are two objects seen; when the light from these objects falls on exactly corresponding portions, the two images are fused into one, and the individual has bi-nocular vision.

When one ocular muscle is paralytic, the image in one eye falls upon the portions of the retina where visual impressions have formerly been received from objects occupying this position. The image of the other eye falls upon a portion of the retina where the image from objects located in a different position have formerly been received; consequently we see double; one object is located in the correct position, and the other object seen appears to be located in exactly the position where objects formerly were which cast images upon that portion of the retina which is now exposed to the image received from the object which the eye not affected locates in its proper position.

Diplopia or Double Vision.—The symptoms which first accompany the development of double vision are frequently *dizziness*, *nausea* and inability to locate correctly the position of objects. These symptoms are due to the mental confusion occasioned by the double images. These symptoms gradually pass off as the mind becomes accustomed to this visual confusion. The capacity for fusion of double images varies greatly in different individuals; it also is less when the cause of the ocular paralysis exists in the substance of the brain than it is when the nerve is paralyzed by pressure at the base of the brain or in the orbit. This is probably due to the fact that any disease in the brain creates such disturbances that the additional confusion of double vision is not annoying to the individual.

To study the nature of paralysis of ocular muscles causing double vision, we place before one eye a red glass and direct the attention at a candle twenty feet distant. *The red glass is placed before the right eye in all the following experiments:* If the red light appears to the right we have homonymous diplopia. If the red light is seen to the left on the same line we have *crossed diplopia*. In the first case the movement of the eyes outward has been impaired. In the second case the movement of the eyes inward has been impaired.

We have next to study vertical diplopias, meaning double vision with one light higher than the other. Thus, if the red light is seen far above the normal position the right eye is directed downward, which means the movement of the eye upward is impaired. If the white light was seen above, the left eye would be pointed downward. The reverse is true where one light is seen below. It is usually best to use a long candle in making these tests, as we are obliged to observe whether the double images incline towards each other at the top or the bottom. The above will cause deflections of the vertical meridians of the eye. If the top of the vertical meridians diverge, the candles will appear to converge or incline inward at the top. If the vertical meridians of the eye incline inward, the candles will appear to incline outward. We are thus enabled to examine the con-

ditions of the obliques and superior and inferior recti muscles.

If the candle is the same height and we have paralysis of the left external rectus, the red candle will appear to the right and the candles will appear vertical. If the eyes are turned up, the candles will diverge at the top; if the eyes are turned down, they will converge slightly at the top.

If the *internal rectus* of the right eye is paralytic, the red light will be seen to the left and will lie vertical. If the eyes are turned up the candles will diverge at the top; if turned down, the candles will converge. Paralysis of the external rectus of the right eye or internal rectus of the left eye will give exactly the reverse of the above-described appearances.

With paralysis of the superior rectus of the left eye, the red light will be seen below and to the left. The white candle, which is above, stands obliquely, the difference in height increases as the eyes are turned toward the left, and the obliquity is increased as the eyes are turned towards the right. The reverse is true when the superior rectus muscle of the right eye is paralytic.

In paralysis of the inferior rectus of the left eye the candles are crossed. When the eyes are directed downward, the white candle is below the red and the top has a decided slant toward the red candle. When the eyes are direct upward double vision disappears. The reverse of this condition is true in paralysis of the inferior rectus muscle of the right eye. In paralysis of the inferior or superior rectus of either eye the images are crossed.

Paralysis of the superior oblique of the left eye gives homonymous diplopia; the white candle appears below. There is also a decided obliquity which increases as the candle is carried to the left. The vertical displacement increases as the candle is carried to the right and the obliquity decreases. The paralysis of the superior oblique of the right eye produces the opposite effect. Paralysis of the right superior oblique places the candle of the right eye in the position of the bottom slanting portion of the letter **K**, while paresis of the inferior oblique places the candle seen with this eye in the position of the upper slanting portion of the letter **K**. In paralysis of the oblique muscles of the left eye, the slanting side of the letter **K** is turned to the left.

This concludes the study of diplopia. In our next we will consider a weak condition of the ocular muscles, which does not cause diplopia, but which is the cause of muscular asthenopia.

Book Notice.—THE CIRCULAR has received the following "Hand Book for Opticians," by W. Bohne, optician, published by the author, with A. B. Griswold, New Orleans, La. The price is \$2.50. The work is devoted principally to the nature and mechanical manipulation of lenses.

The School of Practical Optics commenced January 10th, 1887. From this date to March 14th, 1888, ninety-one students have been instructed. The classes will be formed from time to time in the future to meet the requirements of the students. No attempt to specify the date on which a class will form will be made before the requisite number of applications are in.

Lockings.

THE subject of lockings is one either still imperfectly understood or else carelessly treated. A locking is under no circumstances required to be heavy; its entire absence and the occasional and constant contact of the guard-pin with the roller edge, on which it can exercise no injurious pressure, would be less hurtful to even a fine timekeeper, than the intermittent drag which is caused by a powerful locking at every vibration. A circular rest supplies all that is needed for common work and deep escapements which are the rule in this work, as being the easiest to execute, would not be so objectionable. The pressure of the wheel on the pallet would keep the lever steady and plenty of run in all directions could be had without

the fatal results so noticeable, which defies all the repairer's art. The retarding influence of lockings often neutralizes the effect of temperature, and in cold weather and when dirty, owing to the balance wheel losing its vibration energy, many lever watches instead of gaining take up a losing rate, owing to the retardation of the balance in unlocking. This is not an unmixed evil, but compensation for lockings changes caused by variations in oil and cleanliness, are not arranged for by manufacturers, although they must be combated by repairers.



In our last letter we complained of the dullness in business circles, and gave, to some extent, the foundations of our complaint. Now that the winter has passed and the spring has come, business is again looking up, and the reports are more favorable than they have been for some time. It seems as if trade in the South goes by seasons, and is not uniform like it is in other parts of the country. This fact is somewhat a puzzling one, too, for spring is not the time when the people of the South have the most money, but on the contrary, it is generally considered to be very scarce. However it may be, there is one thing certain, and that is that considerable money is spent, and it comes from somewhere—either from a small bank account or from the savings of the last year's crop.

Atlanta is on a boom, if we may apply that term to as large a city as she is. Recently an Alabamian and an owner of considerable real estate visited Atlanta, and meeting Mr. Henry W. Grady, editor of the *Constitution*, wanted to know of him how it was that all the other Southern towns and cities were booming and that Atlanta was not. Mr. Grady replied that Atlanta, like New York, was too big to boom: that she had hundreds of houses going up all the time, and that her people were so busy that no notice is taken of them, and consequently no blowing is done. This expression from Mr. Grady is fact put in the right direction. While our Atlanta is a very small city compared to New York, Philadelphia and St. Louis, yet she is a large one compared to the cities around her. More factories of various of various kinds are being put into operation here now than any place in the South. Our facilities are as great and our climate much better than that of most Southern towns. People who come here from the crowded North or from the cold Northwest fall in line with us and locate and become useful citizens. Indeed, I think the South is the country of the future, and Atlanta the city of that future.

There is one thing that proves a great drawback to the jewelry business in the South, and that is the double rate the express companies charge them. We do not know why this is so, but it is a fact that the jewelers in this city and State have to pay the express companies double the rate of other merchants. I interviewed several of our leading jewelry merchants, and they all make the same complaint, and think it an outrage that they are imposed upon in this way. We do not know the cause of this extra charge on the jewelry merchants, and trust that those who are most interested in the trade in the South will look into it, and, if possible, remedy it.

As I mentioned before, trade is looking up this month, and bids fair to be quite satisfactory all through the spring.

Mr. J. P. Stevens, of Stevens & Bro., has gone to California on a pleasure trip. He will visit several noted places in the West before he returns home, which will be about the first of June.

Mr. E. W. Blue a few years ago came to this city from Ohio. He came a perfect stranger, but to-day he is no stranger to our people, and is one of the best known and most satisfactory jewelry merchants of our city. He has built up a fine trade, and is rapidly increasing it. He has handsome stores now on Peachtree, the most fashionable street in the city.

Mr. Freeman, of Freeman & Crankshaw, will probably spend the summer in Europe enjoying himself and looking after the interest of his great jewelry establishment. He is a capable man, and merits the success he has so worthily achieved.

Harry Meyers & Co., on Marietta street, has been enlarging their stores, and the success they are having is of the most satisfactory character.

Mr. A. B. Pharr is one of our most popular jewelers. He has



The following list of patents relating to the jewelry interests, granted by the U. S. Patent Office during the past month, is specially reported to THE JEWELERS' CIRCULAR by FRANKLIN H. HOUGH, Solicitor of American and Foreign Patents, 925 F Street, N. W., near U. S. Patent Office, Washington, D. C. Copies of patents furnished for 25 cents each.

Issue of February 28, 1888.

- 378,524—Filling Device for Fountain Pens or Tubes. Reuben C. Rutherford and Ferdinand S. Bartram, New York, N. Y.
- 378,528—Correcting Device for Ships' Compasses. Leon Sirieix, San Francisco, Cal., Assignor to the Sirieix Mariners' Compass Co.
- 378,589—Advertising Clock. Gustav Hoisholt, Watsonville, Cal.
- 378,592—Stop Watch. Victor Jeannot, Geneva, Switzerland.
- 378,836—Speed Indicator. George S. Heath, Hartford, Conn.

Issue of March 6, 1888.

- 378,908—Pin and Attachment for Jewelry. Louis Sterne, London, England.
- 378,923—Button. Shubael Cottle, New York, N. Y.
- 378,956—Sleeve Button. Louis D. Frenot, Newark, N. J.
- 378,959—Watch Case Pendant. Peter Henry, New York, N. Y.
- 378,965—Combination Spectacles. Bernard Krause, O'Fallon Depot, Ill.
- 378,974—Stem Winding Watch. David Perret, Neufchatel, Switzerland. Patented in France.
- 378,986—Fountain Pen. W. W. Stewart, Brooklyn, N. Y.
- 378,987—Fountain Pen. W. W. Stewart, Brooklyn, N. Y.
- 379,050—Stem Winding and Setting Mechanism for Watches. Duane H. Church, Newton, Mass.
- 379,075—Stop Watch. Henry A. Lugrin, Brooklyn, N. Y.

Issue of March 13, 1888.

- 379,238—Fruit Knife. Luther C. McNeal, Rochester, N. Y.
- 379,319—Pickpocket-Proof Pocket Receptacle. Sollo Mendelson, Los Angeles, Cal.
- 379,450—Manufacture of Clock Cases and other Articles from Plastic Material. Reese P. Coughlin, Winsted, Conn.
- 379,511—Machine for Regulating Timepieces. William B. Farrar, Greensborough, N. C.
- 379,529—Button. John Costello, Attleboro, Mass., Assignor of one-half to James F. Simms, same place.

Issue of March 20, 1888.

The Brooklyn Watch Case Co. have been granted a certificate of registration of a trade-mark for watch cases, "The representation of the head of a steer in conjunction with the word 'Granger.'"

S. F. Meyers & Co. have been granted a certificate of registration of a trade-mark for watches, clocks, jewelry and silverware, "The words 'The Globe.'"

- 379,833—Seconds Setting Mechanism for Timepieces. Fred. Terstegen, Elizabeth, N. J.

hosts of friends, who are proud of the success he is making

I heard an experienced jeweler the other day say that Mr. F. C. Wade was by far the finest engraver in Atlanta, and probably the finest in the Southeastern States. He is known here as a specialist, and has the confidence of the public.

The new house of Mr. J. S. Doyle is meeting with its share of success. Mr. Doyle is one of the most popular merchants in the city, and sells his goods at a reasonable rate.

Mr. A. J. Gerbie has moved his store from Whitehall to Decatur, and is handsomely fixed up on that street. He has increased the capacity of his store, and now handles a considerable quantity of goods.

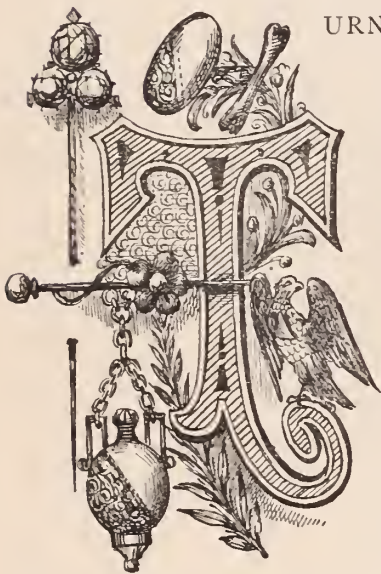
Mr. J. N. Dyke, on Decatur street, has a very nice store and reports his business as looking up.

Mr. W. D. O'Quinn, one of the best and oldest jewelers in this city, died on March 6th. The deceased was for many years identified with Stilson's jewelry house, and was a man highly esteemed by all who knew him.

T. J. K.

Lathes and Lathe Work.

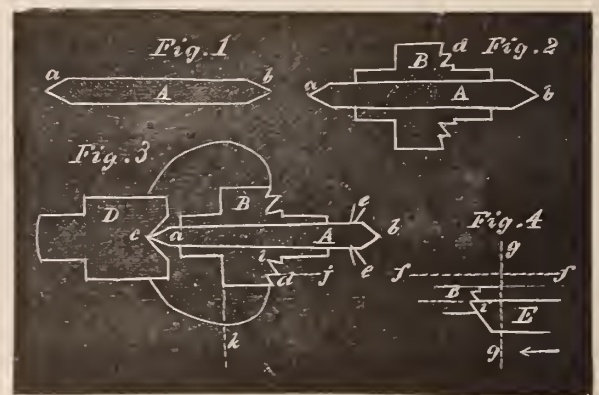
BY THE MODEL WATCHMAKER.



TURNING in a center pinion is a matter of importance, and should receive a proportionate amount of consideration, as a great deal depends on the accuracy with which this is performed. We have many little troubles growing out of imperfect center pinions; among these are catching of the hands. With Swiss watches, especially the smaller kinds, like ladies' watches, we frequently come across those that the hands will catch, true them up as we may, and frequently, too, this will occur after we have turned the hands around repeatedly with the bench key. There are certain relative positions of the parts which,

when the watch is running, occur that cause the hands to come in a position to catch. In putting in a center pinion where we wish to be extra accurate, we should use a wax chuck. The hole through the center of the pinion should be enlarged to fit the center arbor or set square before we commence to turn the bearings. Most workmen use a broach for this purpose, but a stumpy drill, I mean by stumpy a thick drill at the point. A split chuck can be used to hold the pinion, and use the drill precisely as we would if drilling for a pivot. Only drill half way through, reversing the ends so the drilling meets in the middle of the pinion. After the drill is through, then a broach should be used to make the hole slightly taper. Many use a broach too tapering; this is a mistake; it should only taper in the slightest degree. To turn a center pinion, we fit up a temporary arbor which will just go into the hole where the set square goes. Such an arbor is shown at *A*, fig. 1, and is made to fit the center pinion the same as the center square. At fig. 2 is shown a longitudinal section of the little center arbor *A* and the center pinion *B*. The idea is, the conical points *a b* will go into the hollow cone *c* in the lathe chuck shown at *D*, fig. 3. When the pinion is inserted in the wax, as shown at fig. 3, the upper end where the wheel is set should be out. By taking hold of the upper end of the little arbor *A* with the cutting pliers at *e e*, fig. 3, the arbor *A* can be pulled out, leaving the pinion *B* secure in the wax. I suppose it will be unnecessary to say that the pinion *B* should be turned up perfectly before the center arbor *A* is removed

letting the point *a* rest securely in the hollow cone *c* of the lathe chuck *D*, truing by the point *b*; after the wax is perfectly set, then pull out the arbor *A* and turn up the part *d* where the center wheel is to go. The best method of holding the graver for this part of the work is obliquely above, letting the cutting angle of the graver cut with an oblique action. After the seat for the wheel is established, we should sharpen the graver very sharp and turn out the angle at *d*, fig. 3, very carefully. The graver should be applied cautiously, as shown in fig. 4, where the dotted line *f f* shows the axis of the lathe, and *g g* the position of the tool rest. The graver is advanced in the direction of the arrow *h*, using extreme care it does not catch and bend the leaves of the pinion. By using the graver as shown at *E* we get cleaner angles at *i*, fig. 4. In this figure only a portion of the pinion is shown to illustrate the cutting of the graver *E*, and the graver is supposed to be on the line *j*, fig. 3. The angle on the pinion leaves, as shown at *d*, fig. 4, is intended to be indented into the center wheel when riveted on and insure stability. The same method of holding the graver is used when undercutting at *l*, fig. 3, and the end of the leaves of the pinion which rivets over on the center wheel should be turned to an edge so as to close easily over the center wheel and ensure stability, as the center pinion of a Swiss watch, with no safety pinion, if a mainspring breaks gets a bad wrench. In putting in a pinion we should make our measurements so as to have the lower face of the pinion on the line *k*, fig. 3, come so we can rise the polished face of the pinion as it comes from the material men. It is not important this face should be to very exact measure in regard to



height. The measure for the height of shoulder and the seat of the center wheel can be got from the old pinion. In turning in such a pinion it is well to turn the pivots or bearings which go into the lower plate, and also into the bridge over the wheel carefully. These are frequently too long and throw the cannon pinion too high, or the washer under the set square too far away from the bridge. And again the pivots are often too short, so the common pinion rubs on the plate or the washer on the bridge. All this must be carefully looked to. After the upper end of the pinion is properly fitted and the pivot nicely polished, the little arbor *A* should be replaced, and the wax heated and the pinion removed. The ends are now reversed in the wax, the end *b* of the arbor *A* is now placed in the recess *c* of the chuck *D*, truing up by *a*. In the present instance we cannot remove *A*, but must turn and finish the lower part of the pinion *B* with the arbor *A* place. A good deal of care should be used in measuring to insure the proper length from shoulder to shoulder. In doing this a split chuck can be used to establish the right length, then put the pinion in the wax. It is quite difficult to fit the hole exactly to the center arbor by broaching out, and for this reason many workmen fill the arbor of the set square. Filing of a center or set square is, in a strict sense, never to be done. The round or arbor part of a set square should be turned as much as a balance staff. The object in turning the center pinion on a carefully turned center (like *A*) is to insure the exact coincidence of centers. Suppose a center pinion has the hole through its center out of line, we have the same result as if the center wheel was not upright, producing precisely the result described at the commencement of this article, that is, the hands

would catch in a mysterious manner; but if the center pinion is perfectly true and the center square true, then with the center wheel properly uprighted, the hands and dial work of a very flat, thin watch will give no trouble. In turning center or set squares use a piece of round wire tempered to a spring temper, turn up the arbor part, then file the square on top before you cut off. Then reverse ends and place the the small round part of the arbor in a small split chuck and finish the top of the square. If you undertake to hold the arbor by the small part to square and finish the top you will be very likely to bend it.



LONDON, March 9th, 1888.

The matter that is of the greatest present interest to our trade here, cannot be so interesting to your readers. The New Merchandise Marks Act to which I referred rather freely in a former letter is now in full, but uncertain operation. The measure is regarded very differently by different members of our industry. The Act was not intended for the especial benefit of the jewelry trade, but I for one think it must benefit the trade eventually. The staple commodities we use—gold and silver, are capable of limitless alloy, and certainly of unlimited imitation, that it is most desirable that all concerned, especially the inexperienced public, should be protected against the devices of nefarious dealers. The honest maker of a genuine article will be to a great extent freed from dishonest competition, that the purchaser will have a certain degree of protection that will give him a greater confidence in his purchases.

Novelties in window decoration are always attractive to me. Absolute novelties I confess are somewhat rare, but I met with one in Regent street the other day. In the window there is a well executed bust of her Majesty. Round the neck, is a necklace of sparkling diamonds. There is the Blue Ribbon of the Garter properly adjusted, and resting on it is a star-shaped ornament, decorated with sapphires. In close juxtaposition were skilfully placed some of those imitation brilliants which are known here as Faulkner diamonds. It was altogether a grand display, and it was quite impossible for the inexperienced to distinguish the genuine from the spurious. I was told, but not by any one connected with the establishment, that a silver plate is fixed at the back of the imitation gems, which make their resemblance to the real ones still more striking.

As a rule, if one wants to see the "latest," either in dress or jewelry, the wish can be gratified at any fashionable wedding. I am a bad hand at describing the former, but am sometimes obliged to mention it, in order to introduce the latter. At a recent wedding at South Kensington, the bridesmaids, six in number, if I remember rightly, were attired in a manner that I must content myself by describing as superb. To go much into detail will only display my own ignorance without enlightening your lady readers. I am safe, however, in saying that the hats were covered with dark velvet, and trimmed with ribbon to match, relieved with two light tips of *vielle rose*. The most conspicuous bow of ribbon was fastened with a pearl and gold arrow. These were really beautiful in their simplicity, and in the group were very effective. One of the visitors wore a black velvet bonnet lined with pink, the strings of which were fastened by very sparkling diamond pins. I have not seen diamonds so unassumingly attractive as these were. Amongst the numerous gifts displayed was a very original set of four fruit spoons. At the top of each handle there was a small figure of one of the characters in Dickens' novels, and across the silver-gilt bowl was a fac-simile of

the signature of Charles Dickens. I suppose after the manner of the "Apostle spoons," this set would be called the "Charles Dickens Spoons." I have not seen any such before, but the idea is a good one, as the wedding present in this instance certainly was. Brooches seem to present greater scope for novelty than the majority of dress ornaments. One of the newest, and I should think one of the most expensive, represents the head of a dog. It is formed altogether of small diamonds, with rubies for the eyes. The mouth holds a whip with a red gold lash and a silver handle. Rings are always popular, and I have always considered that the good taste, or want of it, of either lady or gentleman, may be as readily recognized by the rings they wear and the way they wear them, as by any other means. I have heard of persons putting rings outside their gloves, and I am now told that rings are sometimes worn in the hair. The rings with fine stones are fastened on pins and secured in the hair, sometimes to the number of three or four. I cannot say that the practice is commendable, although as a means of display it is original. I have not yet seen your issue for February, and am rather doubtful as to the extent to which your readers may be interested in our new regulations for marking watches and parts of watches sent here. I may perhaps refer to this again. The Merchandise Marks Act is having such a very important effect upon various industries, that I do not consider it out of place to refer to it again in the interests of any of your manufacturers who may be sending goods here. Traders on your side of the water, as well as those on ours, cannot be too well informed on this subject. It is significant of its importance that the Board of Customs has issued an important treatise on the act, written by its legal adviser, and the Cutlers Company have published an equally important legal opinion by eminent London counsel. It is an offense against the act to mark any article. Hand made, that is, wholly or in part machine made, goods from abroad must have the place of origin marked on them, and in the case of articles coming from America from towns bearing the same name as towns in this country, it is required that in future they must be distinctly marked with the letters U. S. A., in addition to the name of the town. Some consignments from the states having been detained by the customs authorities in consequence of non-compliance with the new regulation, your manufacturers should ascertain exactly what is required and so prevent delay and disappointment to their customers here.

VIGILANT.

BIRMINGHAM, March 3. 1888.

Although we are just at the end of the slack time of the year, manufacturers as a rule have no cause to complain of the amount of trade being done, especially if the recent severe weather be considered, as there is nothing that brings the jewelry trade into such a thorough state of stagnation as a severe snow storm.

The great number of failures in the trade during the past year has caused most people connected with it to consider whether something cannot be done to avoid such another disastrous time, the first thing that suggested itself to the majority was an association for the protection of the trade, this was consequently formed some months since, and has been endeavoring to enlist the sympathies of all makers but up to the present with poor success.

The custom of the trade is for manufacturers to sell to the factors in the large houses, and for the latter to sell to the shopkeepers about the country, but this custom has been broken in so many cases both by factors making some goods themselves and by some manufacturers selling direct to the shopkeepers.

Unfortunately for the association there is one factor who also manufactures occupies a very important position in it, and as no doubt his object is to gain an unfair advantage over other factors, his being a member causes many to hold aloof.

A few days since the association through the influence of this

member decided to endeavor to agree on a uniform price for Hall marked silver chains in order to prevent the present cutting of prices which has made this portion of the trade almost profitless. Had all agreed to this, it would have given this one factor an undue advantage as the price would have been such that he with his manufactory could have made his own chains, and sold to the shopkeepers at the same price as other factors bought, whereas, at the present cut prices it does not pay him to make, but some large makers were as sharp, as he and so refused to sign the agreement. This has of course brought the association into disrepute, but in their new effort they deserve the support of the whole trade.

Some of your readers may be aware that our Hall marking is done not by government, but by an ancient company, holding a charter some five hundred years old, called the Goldsmiths Company. According to the old Acts of Parliament, this company forces makers to have certain kinds of silver plate of 925-1000 quality, and marked by said company, and in addition duty paid to them, this makes it impossible for us to compete in many foreign markets, so the Jewelers Association has taken the matter up and intends to get these obsolete acts repealed if possible.

There has been very little jewelry made to commemorate the silver wedding of the Prince and Princess of Wales, which occurs on the 10th inst. Coming so soon after the Queen's Jubilee, dealers are afraid to touch it, as many of them still have some jubilee goods haunting them, personally I have not seen a single commemorative article in wear.

I saw yesterday the official medals struck in commemoration of the Queen Jubilee, they are of two kinds, gold and silver, they are exactly alike in design, but the gold one is smaller than the silver one; the one side bears a medallion of the Queen very finely cut and an exact likeness, not the flat expressionless face cut on the Jubilee coins, on the other side is a group of emblematical figures. As a piece of medallion work it is as fine as I have ever seen and will certainly be a credit to the country.

Since I wrote you last, Frank Payton, the gem ring maker of 2 Vyse street, late Follis & Payton, has called his creditors together, he offers 3/6 in the £, but as this was not accepted, the matter is at present in abeyance,

This maker has been in business fully fifteen years, and his failure affords fresh evidence of the hard times makers have gone through.

SOLITAIRE.



[THE CIRCULAR is not responsible for the opinions or statements of contributors, but is willing to accord space to all who desire to write on subjects of interest to the jewelry trade. All communications must be accompanied by a responsible name as a guarantee of good faith. No attention will be paid to anonymous letters. Correspondence solicited.]

OPINIONS RELATIVE TO THE MANUFACTURERS' AND JOBBERS' ASSOCIATIONS.

To the Editor of the Jewelers' Circular :

Since the passage of the resolution by the National Jobbers' Association, prohibiting any member from selling a movement to any retailer without a case, I have tried to learn how this would be received by the retail trade, and am surprised at the stand the jewelers take. One large retailer said to me that before he would allow a jobber to dictate to him what he should and should not do, he would order all his cases of the Dueber Co. And as he could get

all the Swiss movements he wanted that would fit American cases he would sell them with the Dueber cases instead of the American movements. Also added: "I now have at least 25 Swiss movements and shall write to-day to Dueber for prices." He also asks me: "How long will this last? A traveler from a jobbing house struts into my store and the first thing he says is: 'The edict has gone forth that no movements will be sold without cases.' Am I simply to submit to this? No, sir; he can take his movements, cases and jewelry all out of my store. Trade is too dull and the Dueber facilities too rapidly increasing for me to overlook this insult." In general I find the retailers bitterly opposed to this action of the jobbers, and look upon it as though the jobbers had been used by the watch companies as a cat's paw, as the jobbers can receive no benefit from enforcing this action. But it creates a big demand from the retailers for the Dueber cases, and is the biggest advertisement that could be given the Dueber Co. I had a talk with a jobber who was at the meeting that passed this resolution and he said: "I am almost ready now to write out my refusal to carry out this idea any longer, as I am satisfied it is not benefitting us jobbers any." I should think if this action of the jobbers has for its object the forcing out of business of the Dueber Co, it would be well for these jobbers to publish for the benefit of their patrons the reasons for the aforesaid action, for I am sure that the retailers do not see it in the same light to-day as the jobbers.

TRAVELER.

NATIONAL ASSOCIATION OF JOBBERS IN AMERICAN WATCHES.

The following is the full text of the circular sent out by the above named association, which is referred to by several of our correspondents:

NEW YORK, February 23, 1888.

DEAR SIR—At the annual meeting of the National Association of Jobbers in American Watches, the following action was taken in the interest of retail dealers:

Whereas, A number of dealers are making a practice of sending out catalogues, circulars and price lists, and in other ways advertising the sale of American watches to the consumer at the regular trade prices, or at a very slight advance upon the same; therefore

Resolved, That the Secretary shall send to each member the names of any dealers whom he discovers advertising the sale of American watches to the consumer at less than 25 per cent. in advance of the net cash price to retail dealers, and after receiving such notice, it shall be considered a violation of contract, punishable with expulsion, for any member to sell or furnish any American watches to such dealers, until notice is received from the Secretary that they have given him such assurances as have satisfied him that they will not offend in future.

It was also

Resolved, That no jobber shall be allowed to sell any American movements without cases. The cases may be of gold, gold filled, silver or base metal, and it is not necessary that they should fit the movements sold with them, but at least as many cases as movements must be sold in each bill.

Cases may be sold without movements to any desired extent, but not a movement without a case of some kind accompanying it.

This rule was not passed from any desire to be arbitrary, nor to oppress or annoy the retail dealers, but is deemed a necessary measure of protection, and warranted by the peculiar state of affairs at present existing.

It is inconvenient and unpleasant to the jobbers also, but is essential for the preservation of our Association, which has been of such mutual benefit to the whole trade, and has been adopted for that reason only.

Believing that the prosperity of the retail trade is essential to the manufacturers and jobbers these associations were formed, not as

"trusts," but for the purpose of keeping the distribution and sale of American watches in proper hands.

Some of the benefits which you have enjoyed are:

1. A stability of prices unknown before.
2. The certainty that you were getting as low rates as any other retail dealer.
3. The removal from the list of jobbers of a number of dealers who were really your competitors.
4. The abrogation of the list of "special retailers" which has just taken place.

A thoughtful consideration of the improvement in the watch business during the existence of the Association, must convince you that it is to your interest to support it, and it is therefore hoped that you will accept the new rule in the spirit it is intended, as long as it may be necessary to enforce it.

Very respectfully,

JAS. H. NOYES, *Secretary*.

WHAT A COUNTRY JEWELER THINKS.

To the Editor of the Jewelers' Circular:

I have just received a circular, dated February 23, 1888, from Jas. H. Noyes, Secretary of the National Association of Jobbers in American Watches, stating among other resolutions passed at their annual meeting—all of which are stated to be purely in the interest of the retail dealers—that jobbers shall not sell an American movement without at the same time selling a case of some kind with it. Surely this is a great protection for us poor retailers, and we should all feel much gratified that such a great and wealthy body of disinterested men should take such a great interest in our prosperity. No one will doubt that their motive is pure love for the retail dealer, who, without any question, are not able too look after their own interest, and need just such a pure and unselfish body of men to protect them or we will all go to the dogs!

But see how this particular resolution will work. It is an every day occurrence to have a customer come into our store with a good watch case, either silver, filled or gold, and a low grade movement in it, and he desires to keep his case but wants a better movement. Under the new deal, if we sell him a movement we will have to throw away the case we bought with it, as we cannot get another movement to put in it. Every retail dealer in the land has such cases almost daily. Again, a customer has a cheap movement in a fairly good silver case, and wishes to change the whole for something better; or it may be a key and he wants a stem wind; hunting and he wants open; or, perhaps, he wants a gold or filled case and fine movement, and we are all glad to let him have just what he wants, allow him a nominal price for his old one and make a fair profit on new one. But what will we do with the old one? If the case is in fair condition and the movement worthless, we re-polish and repair the case, put a *new* low grade movement in it, sell it as a second-hand case with new movement, getting a little more than the old silver value for the case and make our profit on the movement. Again, we take an old case as part payment for a new one, and dispose of them in the same way. These are every day occurrences with every retail dealer in the country. Less than four months ago I sent fourteen old silver cases to parties who make that their business, had them repaired and polished, put new movements in them and found a ready sale for them, stating to my customers just what they were. Will these philanthropists tell us how we are going to do this kind of business if we cannot buy movements?

But here is something for the jobbers to explain: In the county where I live, in western New York, in a small country village 30 miles from me, of 300 inhabitants, a man has a general country store, dry goods, groceries, etc. (no watches or jewelry kept in stock), but he boldly advertises that he has price lists, and will send and get any gold or other kind of watches, and sell them at from one to two dollars above prices quoted in lists. And to my certain knowledge he sells lots of them, and there is comparatively few jobbers in the city

of New York but what will fill his orders for a single watch or send on memorandum as low as a retailer can get them. In my own village a grocery keeper does the same thing in a smaller way, and his orders are filled by the jobbers as readily as mine or any other legitimate jeweler. Verily, the love of the jobbers for the retail dealer "surpasseth all understanding." I would like to hear from other legitimate retail dealers through your columns.

Western New York, March 4, 1888.

COUNTRY JEWELER.

WANTED—A SECOND-HAND SAUNIER.

To the Editor of the Jewelers' Circular:

Can I obtain a copy of Saunier's Treatise on Modern Horology in a less expensive binding, or do you know of any one wishing to dispose of a second-hand copy?

J. H. A.

Washington, D. C.

[Saunier's Treatise is only published in one style of binding, price \$15. If any of our readers know of any one wishing to dispose of a second-hand copy we would be glad to hear from them.—ED.]

BACK VOLUMES FOR SALE.

Mr. A. E. Rockwell, of Northville, Mich., a subscriber to THE CIRCULAR for a long time, and an occasional contributor, writes that he is willing to sell 15 back volumes of THE CIRCULAR.

KIND WORDS.

Mr. James Milton, Eufaula, Ala., writes: "I have been a subscriber from the first number, and have the volumes from 8 to 18 inclusive, complete."

Mr. W. E. Counter, Three Rivers, Mich., writes: "THE CIRCULAR is one of our necessities."

Mr. O. A. Pease, of Corning, Ia., writes: "I have been a subscriber since 1872 and can't get along without it."

M. J. Linnebrink, of Rochester, Pa., writes: "I really think reading the advertisements in THE CIRCULAR repays the cost of it, as we see many new things often, illustrated with cuts, that interest us."

R. C. Green & Son, Pottsville, Pa., write: "We esteem it very highly, not only on account of its useful information and suggestions, which are really invaluable to every intelligent jeweler, but also as a work of artistic merit. We wish you every success."



Jewelry items from this section are indeed scarce this month, and it is with difficulty that I have found enough to sign my name to. It is hard to say what the reasons for this are, except that it may be summed down into two words, "overstocked market." This may have been brought about by the boom which was experienced from November to February, but many attribute it to the unsettled condition of trade in consequence of the near approach of the presidential election. To those cities and towns which have a large variety of business, it is hard to realize the position of the people who live in a town devoted entirely to the manufacture of one kind of goods, when the call for that material gives out for any length of time. The

result of such a state of affairs is far reaching. Many of the men of family obtain the necessities of life under the credit system, and so when these men are out of work, the blow falls the heaviest upon the home merchants, who, knowing their customers to be "good," seldom fail to extend credit when it is asked. By what I have said I do not wish my readers to infer that the jewelry shops of

ATTLEBORO

are at a complete standstill. On the contrary, there are only one or two who are at this writing stopped entirely, but the rule is short hours and reduced number of help, with apparently the prospect in the near future, if nothing happens, of a still further reduction.

During the present week we have, like our brother-jewelers of New York and Philadelphia, been in the perfect enjoyment of an isolation from the outer world. The great snow storm which buried New York last Monday reached us Thursday, but it had expended its force before reaching here, so that travel in this vicinity was only slightly impeded, but some of the firms here had salesmen in the region of the heaviest fall, and did not hear from them for several days. This has caused an immediate absence of orders with a few firms, which has obliged them to shut down temporarily. Among those who were snowed under was Mr. C. A. Marsh, of Marsh & Bigney. He had reached Philadelphia when the storm overtook him and was obliged to remain there three days. His trip was fairly successful, but he reports an apparent unwillingness on the part of jobbers to place many large orders.

The firm of Watson & Newell are running on short time, and Mr. Watson, the senior member, is finding time to interest himself in the affairs of the town, whose election occurs next Monday.

Since my last letter the firm of J. Costello & Co. have been enjoying a little domestic quarrel, which has resulted in the dissolving of the firm, Mr. Costello taking complete control.

Bliss Bros. are just now doing a very good business, having been successful in obtaining a few good orders.

W. H. Wilmarth & Co., who do nothing but cheap work, are keeping along quietly, as is also the firm of Horton, Angell & Co., with a little better class of goods.

Daggett & Clap have been closed up entirely this week, but Bates & Bacon, manufacturers of watch cases etc., although feeling the general depression, are yet having a fairly good trade.

NORTH ATTLEBORO.

The month of March will be remembered in this vicinity as a season of dullness in the jewelry trade, but the manufacturers have had a topic of conversation in a case at court, in which one of their number, Healy Bros., have been the defendants. The suit was a civil action brought by the First National, the Glen's Falls and the New Hampshire Insurance Companies, to recover the sum of \$4,700 which the plaintiffs allege was wrongfully paid the defendants after the fire in the latter's shop at Attleboro Falls about a year ago. Some of the ablest lawyers in the State were engaged as counsel on both sides, and the case has attracted the attention of members of the bar from all parts of the State. The facts of the case, in a few words, are as follows: A little more than a year ago the factory of Healy Bros. & Co., which was then located at the Falls, caught fire one morning, and, as was supposed at the time, the entire stock and tools were destroyed. Only a short time before this the firm had borrowed the sum of \$5,000 from R. F. Simmons & Co., the money to be used to buy out the interest of a member, Mr. E. L. Cheever. A note for the amount was given with the understanding that when it became due, R. F. Simmons & Co. could elect whether they should retain an interest in the firm or receive the face of the note. In settling up after the fire R. F. Simmons was named as one of the appraisers, and he recommended the entire insurance be paid, which was done. The insurance companies afterwards learned of the transaction of the note, and now claim that Simmons was an inter-

ested party and thus could not act as an appraiser. The case occupied the attention of the Superior Court for one week, and at the close a verdict was awarded in favor of the insurance companies, allowing each company \$325.

E. I. Franklin & Co. are almost always busy, and they are now doing a very good business.

Bugbee & Niles find a better business from the fact that they were the successors of an old firm, than they would if they had struck out with a new business.

But there is no use telling the same old story about every firm. The fact of the matter is that business is DULL, and not a firm will deny it. No matter whom you talk with they have the same thing to say, but they are hopeful of better things before long. The manufacturers of cheap goods will start to making campaign badges as soon as the result of the great national conventions are made known, and this will give work for a while to a good many hands.

Attleboro, March 16, 1888.

MENDON.



BUFFALO, N. Y.

The City of Buffalo is quite well represented in the jewelry business both wholesale and retail. The leading and the largest store in the retail business is the large and handsome store of T. & E. Dickinson, the firm being composed of Mr. Thomas Dickinson and his wife Elizabeth. Mr. D. organized this concern in 1847 beginning in a small way, ably assisted by his wife, who became an equal partner in the business in 1863. It is remarkable the success that this firm has met with, as to-day they occupy one of the largest and will be one of the handsomest, when re-furnished, of any store in the state west of New York. The late fire damaged the rear and upper stories of their store to the extent of \$28,000 upon which was an insurance of \$18,000, which has been fully adjusted. The third floor rear destroyed by fire was full of surplus stock. The second floor was used as workshops and machinery room, and the rear of main store was well-stocked with fancy clocks, bronzes and musical boxes all being badly damaged by water.

Their stock of goods cannot be surpassed in size or quality by any store between New York and Chicago, and their store, stock and fixtures are estimated above \$200,000.

Their son, Mr. Alfred Dickinson, has full charge of the watch department and the finances of the business, and is always on the alert for a cash discount. Mr. and Mrs. Dickinson have the balance of the business to look after, Mrs. D. doing the buying as well as the greater part of the selling, assisted by two young salesladies. They expect to have their store re-finished by March 25, and have a grand opening to display new and rich novelties for Easter and the spring and summer trade.

Mr. T. C. Tanke, 411 Main street, Corner of Clinton, has a bright store, and a handsome stock of goods both in jewelry, silver and fancy goods. Mr. T. has been in business for a long time in Buffalo, and has built up a fine trade, which is fast increasing. He also is a self-made man. Beginning with a limited capital, and by his close attention to every detail of the business, he has established himself in a position which warrants him his share of the jewelry trade.

Edwards & Lee, 300 Main street. This firm although recently established, has the material in it to make a very successful business house. Mr. A. M. Edwards has been in business here for some time

and as a watchmaker has but few equals in the city. He served his apprenticeship in Cleveland, worked for a time after that at Batavia, and finished under Adolph Guyot of Neuchatel, where he perfected himself in the art of adjusting and springing the finest watch movements. He is to have full charge of the watch department of the new firm. Mr. William A. Lee, the new member of this concern is a thorough business man, and until recently was the eastern representative of the large diamond importing house of H. C. Hardy & Co., 30 Maiden Lane, New York. Mr. Lee's schooling in the manufacturing jewelry business was with the old and long-established house of Hale & Mulford, New York City, and his ability there was recognized by making him a member of the new firm of S. W. Hale & Co.

Mr. Lee will have full charge of the business outside of the watch department doing the buying and attending to the financial part. Their store is handsomely finished in cherry, and will be well-stocked with the novelties of each line in jewelry, silver, cut glass and the different makes of pottery. They have the agency for the City of Buffalo, for the sale of the Vacheron and Constantin watch. Their opening will take place about March 25, and they will display a handsome line of Easter novelties. Mr. Lee's old customers and friends join in wishing him continued success.

T. V. Dickinson, 382 Main street. About one year ago Mr. Dickinson moved into this store and put in all new fixtures of black walnut mirrors and stained glass. This store for one of its size, 18 x 55 feet is the handsomest little gem of a jewelry store I have ever been in, and speaks well of Mr. D's tastes. He has been in the jewelry business for the past 26 years, is a practical man, and has been in business for himself for the last 9 years. He has a well-selected stock and it is beautifully displayed. He sells a watch with his own name on. Mr. Dickinson's business has increased very much since he went into this new store, and is far ahead of 1886.

Ruger & Kimball have a handsome store and do their share of the retail business.

Mr. Hiram Hotchkiss is doing a fair business at the old stand that he has occupied for so many years.

King & Eisele, 283 Main street, Buffalo, N. Y. This firm composed of W. F. King and Edward E. Eisele has been in business at 283 Main street, for the past 18 years. They do a large manufacturing business and are members of the National Jobbers Association. They manufacture a fine line of diamond mounting and make a specialty of rings. You can form some idea of the amount of business they do by their employment of about 80 men in the factory which is only one branch of their business. They have 4 travelers who make regular trips through New York, Pennsylvania, Ohio, Michigan and Wisconsin. They report their business for 1887 about 25 per cent. above 1886, and are direct importers of all stone used in their factory.

Heintz Bros., 48 and 50 Seneca street, is an enterprising firm who did quite a jobbing business up to three years ago when they gave up that branch of the business and now devote their whole time to the manufacturing of rings and diamond mountings. C. F. & L. G. Heintz have been in the jewelry business here for the past 13 years, and have been quite successful. They employ about 40 men in their factory and 3 travelers to look after their trade in the northwest and west as far as Kansas. They report a very satisfactory business for 1887.

Gillett & Co., 48 and 50 Seneca street, have been in the manufacturing and jobbing business here in Buffalo for the past 8 years, having a factory in the upper stories of the same building with their office. They employ one traveler whose trip extends through New York, Pennsylvania and Michigan. They make a specialty of rings and report a good business for 1887. The members of this firm are A. A. Gillett & H. H. Gillett.

The Wiesbauer Manufacturing Co., 13 to 19 Gull street, Buffalo, N. Y. This business for the manufacture of jeweler's findings, was organized into a stock company March 1st, 1887. They occupy a large 3 story building wholly devoted to the manufacturing of their

specialties which include fine trays, velvet, plush and morocco cases, tags, cards, wood-mailing and express boxes, also a fine line of fancy paper boxes, and are the sole manufacturers of the Fowler patent material cabinets which have a large sale. This house has gained quite a reputation on their goods, not only in this state, but throughout the west, and are ably represented by two popular travelers.

HARD SOLDER.

Hiram Camp, President New Haven Clock Company.



WE PRESENT in this issue of THE CIRCULAR a fine portrait taken from a recent photograph of Mr. Hiram Camp, president of the New Haven Clock Company. Mr. Camp was born in Plymouth, Conn., April 9th, 1811, and during a long career of activity has made for himself a respected name as inventor, mechanic and manager. He comes of good old Puritan stock, his grandfather, Samuel Camp, and four of his brothers having been soldiers in the revolutionary war, and intimate with Generals Washington, Lafayette and others of the Patriot army. These veterans of the revolution

were not only noted as valiant and trustworthy soldiers, but also for their piety and religious teachings, traits which have been inherited by their descendants to a large degree. Mr. Hiram Camp was a son of Samuel Camp, Jr., who was a farmer upon the poor and rocky soil of Connecticut, and, having a large family to support, his sons were necessarily called upon to contribute to the maintenance of the family at an early age, and Hiram, who had received a common school education and developed a natural taste for mechanics, expressed a desire to learn the clock-making trade with his uncle, Chauncey Jerome, who was then engaged in the business. At the age of eighteen years Hiram Camp, having all his worldly goods tied up in a handkerchief, walked ten miles from the paternal home to the shops of his uncle where he was received kindly, and entered upon his career as a clockmaker. For more than twenty years he was identified with the business of Chauncey Jerome in the capacities of apprentice, workman, foreman and general superintendent. The works at that time were established at Bristol, but in 1842 the case factory was removed to New Haven, and in 1845 the movement shop at Bristol was destroyed by fire. In consequence of this the entire factory was removed to New Haven. The superintendence of the new structure that was erected, and the placing of the machinery, new and old, devolved upon Mr. Camp, Mr. Jerome being prevented from superintending it himself on account of the illness of his wife. The distance from Bristol to New Haven is about thirty miles, and in those days there were no railroads passing conveniently from place to place, and Mr. Camp used to ride in on horseback this distance of thirty miles from Bristol to New Haven, reaching the factory at seven o'clock, do his day's work, and at six o'clock in the evening starting on his return trip, making a ride of sixty miles each day, and doing ten hours' work in addition.

In 1851 he entered into business on his own account, erecting a factory for making clock movements. In 1853 he organized the New Haven Clock Company with a capital of \$20,000, of which the following named gentlemen were the officers: Hiram Camp, president; James E. English, treasurer; John Woodruff, secretary. Since

that time the capital of the company has been very largely increased; new factories have been erected, and its productive capacity largely added to. The old business of the Jerome Clock Company, with all its machinery, was purchased by the new organization. Through all the changes that have occurred in the New Haven Clock Company Mr. Camp has retained the presidency of the company and the general supervision of its manufacturing department. To-day, at the advanced age of seventy-seven years, he has his own designing room and, when visited last week by a representative of THE CIRCULAR, he was found busily at work upon a lathe constructing a new style of clock, while other models were suspended upon the walls of the room.

Mr. Camp is well known to the clock-making industry as an inventor as well as an expert workman and experienced manager. Among the 2,500 different kinds of clocks manufactured by the company, some of the most novel and curious are the inventions of Mr. Camp. Among these is a clock which beats time to music and whose movements can be regulated at will. This was designed especially for schools to mark time for military, gymnastic and calisthenic exercises. Another valuable invention of his was the "workmen's time clock," intended to report the comings and goings of workmen, and to regulate the movements of the watchmen on business premises. It can be said with truth that he has superintended the construction of more clocks than other living man, for the number of clocks made and sold in one year by the New Haven Clock Company exceeded 600,000, while their regular annual product it is almost impossible to state. Notwithstanding his advanced age, Mr. Camp now spends from seven to eight hours a day regularly at the factory, most of the time in his workroom, designing, inventing and constructing movements for clocks.

Mr. Camp is a well known and highly respected citizen of New Haven, whose life has been devoted to good works outside of his mechanical pursuits. He has held several public offices, serving as a member of the City Council, Selectman of the Town, Member of the State Legislature, and was at one time Chief Engineer of the Fire Department. He is at present President of the Veteran Volunteer Firemen's Association of New Haven.

Having inherited the strict religious principles of his parents and grandparents, he has contributed liberally to the cause of Christianity. Two Sunday school missionaries in Nebraska and one city missionary in another state are now supported entirely by him. He was the founder of the Mount Hermon Boys' School at Gill, Mass., and has also assisted Mr. D. C. Moody, the well known evangelist, in establishing a seminary for young ladies at Northfield, Mass. To both of these institutions Mr. Camp is a very liberal contributor, being President of one and a Trustee in the other. The Ferry street church at New Haven is a creation of his; he gave the land upon which it is built and built the church at his own expense. While devoted to Christian works he is not obtrusive in his views. He has, however, prepared numerous dissertations upon evangelical truths which have been published and circulated very extensively. Whenever he finds a workman in his employ inclined to listen to religious teachings, he takes great pleasure in instructing him and supplying him with literature that may aid him in becoming a believer. The kindly charitable benevolence of the man is forcibly impressed upon his features, as will be seen from the very excellent portrait of him which we present.

During his long life of usefulness he has made thousands of very warm and dear friends who are attached to him not only because of his superior ability as a mechanic and inventor, but of his goodness of heart, his liberality, and his general solicitude in behalf of all who come in contact with him. His mental and physical energies are as perfect to-day as at any time of his life, and his activity and persistence in his life work are phenomenal. The many workmen employed by the New Haven Clock Company are devotedly attached to him, while his business associates, his friends and neighbors, hold him in the highest respect.



Opinions are divided among the Jewelry manufacturers and jobbers of this city as to the wisdom of the action of the National Association, at his session in New York last month, in forming the combination against the underselling of watch cases. The retailers here are against it to a man, denouncing it as a "Trust," whose object is the formation of a monopoly and the compelling of the entire trade to play into its hands. The wholesalers who are members of the association favor the combination in the main, but even among these there is heard the grumble of decided opposition. Of course, those of the Jobbers association members who are against the movement are not willing to be quoted, but without using names, it is safe to say that they are complaining of having been forced into a false position toward their retail customers.

"The same thing was tried once before by a prominent eastern watch company," said one of these malcontents the other day, "and the corporation was glad to abandon the scheme shortly after its conception for the very good reason that a rival company reaped the benefit of it." Local jewelers and those in other sections of the country will recognize the method of applying these remarks without mentioning the name of either company.

Several gentlemen prominent in the jobbing business here stoutly declare that the combination is in the interests of the whole trade and that it was formed for the purpose of furnishing protection for the manufacturer, jobber, and retailer alike. In proof of this they cite the action of the association in wiping out the "special retail list," which they aver places all retail dealers large and small on the same plan.

The retailers' principal objection to the plan, is not they say, caused by a disposition to favor Dueber or any other manufacturer who may desire to undersell the market. They understand that cutting rates by Dueber or any other man will be promptly met by the association combine, and that therefore in such an event they would be the gainers. But their opposition to the "Trust," as it is familiarly called, is based on their assertion that it unwarrantably assumes an arbitrary direction of their business and fixes the prices for which they are to sell to the public. They do not believe that the abolition of the "special list" is sincere, or that it will be lived up to.

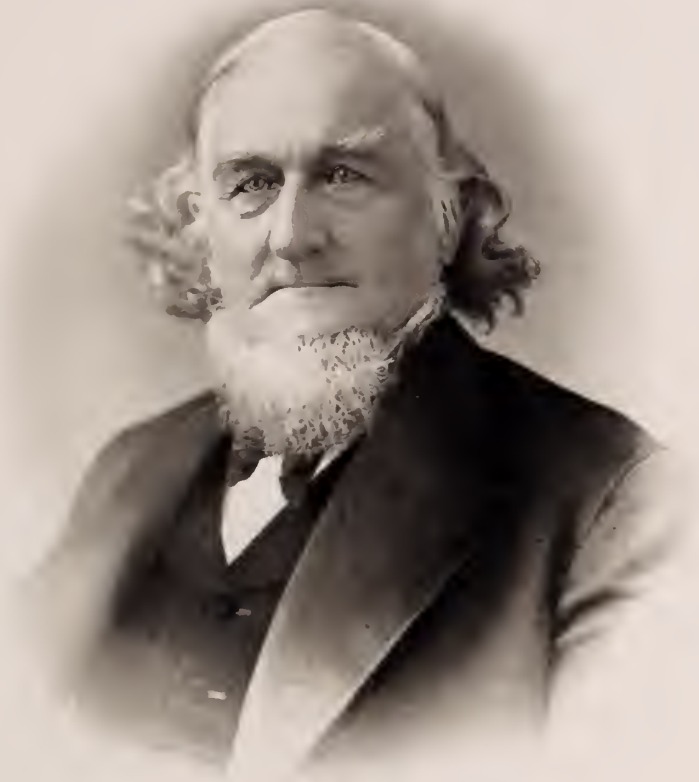
Atkinson Bros. are out in a circular setting forth that the Keystone Watch Company is not bound by the association's action and the new concern recently established by Booz & Humbert, who are not members of the association, is of course inimical to the scheme.

Some of the jobbers and nearly all the retailers in Philadelphia openly declare that the "Trust" cannot last, and that a repeal of the association's pronouncement to the effect that "no movements shall be sold without cases," will be repealed when its operations are fully apparent. We shall see!

Messrs. Booz & Humbert's new venture, the National Watch Case Company, is now firmly established in its new quarters 715 Arch street, and while the works can hardly be said to be in full operation, it is apparent from a cursory inspection of the place that the company has come to stay. "Before April 1," said one of the members of the company, "we will have everything in good working order, and we will add to our force from time to time as occasion demands."

Louis A. Scherr, of L. A. Scherr & Co., is back from his California trip, much better in health than when he started. Mrs. Scherr who accompanied him is also greatly improved. Mr. Scherr speaks highly of the climate of the golden state, and tells entertaining stories of his jaunt. His confreres in the select council of the city legislature are glad to welcome the Chestnut street jeweler back to their midst.

T. B. Hagstoz & Co., describe their trade as "waiting for a set-



2-16-1877

Hiram Camp

SUPPLEMENT TO THE JEWELERS' CIRCULAR AND HOROLOGICAL REVIEW.

tlement of the watch combination question before placing extensive orders."

McCarty & Hurlburt, Sheafer & Co., Simons Bros & Co., and Peter L. Krider have little or nothing new to report in the line of business. All are hopeful for a fair spring trade despite the backward effect produced by the recent "blizzard."

Mr. Henry Hollinshed, of Hollinshed Bros., is absent on a tour in the Cumberland valley of this state. A recent trip up in New Jersey turned out profitably for the firm, and the results of Mr. Hollinshed's present journey are satisfactory and encouraging, according to his letters and orders.

Several jewelers in the northern section of the city have recently been visited by a young man who made unsuccessful attempts to swindle. The man was well dressed, and oily in conversation. He called on Charles Under, 219 West Girard avenue, a well known retail jeweler in that neighborhood one day last week, and ordered various articles of adornment to the value of \$200, directing that they be sent to a house on Richmond street. He then offered in payment a check for \$270, which Mr. Under promptly refused to accept. The would-be swindler tried the same game on jeweler Benning, of 341 East Girard avenue but it failed there also. The bogus check game can't go among Philadelphia jewelry men.

"New tunes is the only thing new in the Music Box industry," so says Mr. Henry Gautschi, of Gautschi & Sons, dealers in these melodious goods. The bulk of this firm's trade is in the west, and the weather has apparently not jarred its harmony, if the reports of the drummers can be taken as a criterion.

All the optical instrument dealers report good business with an increasing volume.

Mr. Williams, of the Philadelphia Optical Company, says that in prescription goods the sales are unusually large with promises for the near future, which amount to actual brilliancy of prospects. He is also enthusiastic over the fact that the competition between opticians and oculists in this line is gradually resulting in favor of the former. This, he declares, prevents the mulcting of the public in fancy prices for optical tests for eye-glass prescription purposes, and cannot fail to benefit the people at large as well as the trade.

M. Zineman & Bro. A continuance of their busy work. The blizzard had the effect of diminishing their mail, a complaint that all the opticians share in, but after its effects passed off, the telegraph had to be resorted to by the men on the road to have orders promptly filled.

The National Optical Company is still in statu-quo. The organization of the corporation is not yet thoroughly effected, and the names of those engaged in the enterprise will not be given out until all details have been arranged. The Superintendent Mr. C. B. Bishop is operating the works at Eleventh and Mifflin streets, and conducting a successful business.

PENN.

March 15, 1888.

Diamonds in Meteorites.

GEORGE F. KUNZ.



IN SEPTEMBER 4, 1886, a meteoric stone weighing about four pounds fell at Novy Urej, Krasnoslobodsk, in the government of Penza, Siberia. In this MM. Latchinoff and Jorefeif found what they supposed to be diamonds of microscopic size. In an insoluble residue small corpuscles, showing traces of polarization, were harder than corundum, and having the density and other characteristics of the diamond, and were present to the amount of one per cent. of the whole mass (see *Nature*, Dec. 1, 1887). Through the courtesy of his Excellency Julien V. Siemaschko, of St. Petersburg, I have been able to procure a small piece of the meteorite. Mr. H. Hensoldt, section cutter at the School of Mines, very kindly

prepared sections of the same, which I found to contain metallic iron in small thin plates, magnetite in small opaque grains, a plagioclase felspar, and olivine in oval grains, but was unable to detect any of these bodies in the sections. Prof. H. Carvill Lewis, to whom I sent the material, informed me that he had extracted two small oval bodies, almost isotropic, and showing no more traces of polarization than occur in many diamonds. With some other fragments of the meteorite, and not with these, he made two good scratches on a polished sapphire. He did not mount the crystals, because they were again lost, so I could not examine them. He was, however, inclined to support the views of the describers.

I found that by grinding with a sapphire four particles of the meteorite, I distinctly made a number of minute but deep scratches on each polished face of four different sapphires with each piece of meteorite. These scratches are characteristic of but one mineral that we know, and that is the diamond; but they are evidently so minute, that they form a coating or an aggregate over the other minerals, and were too small to distinguish, but yet exist in quantity, and may also possibly be the amorphous form of the diamond known as carbon or carbonado (?). Small pieces of the meteorite were then boiled for some time in hydrochloric, sulphuric and nitro-muriatic acids. This readily removed all of the iron and magnetite, leaving only the skeletons of olivine, on which were small black particles, one of which was elongated but rounded, suggesting two joined cubes (?). On crushing one of these olivine pieces with black crystals attached, and grinding it with a polished sapphire it readily scratched the same. If a larger quantity of material comes to hand the writer will have polished a diamond with the powder of the meteorite, using a new wheel for the purpose. The writer has not seen the paper of MM. Latchinoff and Jorefeif, but there seems to be every reason to substantiate their conclusions.

These facts are of especial interest, since on January 15, 1887, Prof. L. Fletcher, curator of the Mineralogical Department of the British Museum, read before the Mineralogical Society of England a paper on a meteorite which was found in the sub-district of Youndegin, Australia, in 1884, and in which he stated he had found a new form of graphite of cubic form, with the hardness of 2.5 and a specific gravity of 2.12. To this he gave the name of "cliftonite," calling attention also, to the fact that Haidinger, in 1846, had found what he described as graphite pseudomorph after iron pyrites (*Poggendorf Annalen*, 1846, lxvii, p. 437), obtained by him from a nodule of graphite which had dropped out of the Arva meteorite. Gustav Rose (*Beschreibung und Entheilung der Meteoriten*, 1864, p. 40; *Poggendorf Annalen*, 1873) expressed an opinion that this mode of replacement of the cube edges on these crystals was suggestive of holo-symmetry rather than hemi-symmetry, and that this interpretation would exclude iron pyrites as a possible antecedent mineral.

The cliftonite was readily examined with a $\frac{1}{4}$ inch objective; and from its structure Professor Fletcher concluded, that, while it is different from native graphite, the sharpness, separateness and completeness of the crystal, the brightness of the faces, the delicacy of the acicular projections, and especially of the obtuse, almost flat, square pyramids, or some of the faces, are quite sufficient to prove that the form has never had any other than its present tenants; in other words, that it is not a pseudomorph. When in cubes, the diamond has faces not very unlike those of the Youndegin crystals, and shows a similar bevelling of its edges by the rounded tetrahedra. Again, Professor Fletcher says it might be argued that, during a hurried crystallization of the carbon, circumstances initially favorable to the formation of the diamond had finally permitted the existence of carbon in a graphite form only. He had also found distinct graphitic crystals, cube octahedrous in form, in the Cocke and Sevier county (Tenn.) meteorites.

When we consider that only a few meteorites have been examined for this mineral we have reason to expect some interesting results in the future.



It really began to look as if THE CIRCULAR would not get its regular budget of news from the Hub this month, what with snow blockades and the complete interruption of the mails; but Old Sol has at last asserted himself and communication with Gotham has been re-established. So, here goes:

The trade during the past month has been, with but few exceptions, very dull. No one expects things to be brisk in February of course, since there is always a reaction of six or eight weeks after the Christmas business is over, but everyone expected that by the middle of March, at least, business would begin to pick up. This, however, has not been the case this year; but it is confidently expected that when the spring trade does commence it will excel that of a year ago. The failures this winter have been few and of no great magnitude, and nothing is now apparent that will injuriously affect the summer business.

One of the main causes of the present dullness is the recent trouble over watch cases and movements. The details of this trouble are too well known to need repeating, but all the jobbers admit that it is seriously hindering the spring trade since the retailers hesitate to make very extensive purchases in that line, fearing that there may be still further changes in prices.

Among the Retailers there is a good deal of "kicking" against the Association of Jobbers relative to movements and cases. It is a common custom among them to buy a large supply of cases to keep in stock, but to buy movements only as sales are made. The cast iron rule of the Association just made that no cases can be sold except with movements, is in consequence, causing them trouble, as they find themselves with a large stock of cases on hand and no way to obtain movements for them unless the rule is relaxed. But all the jobbers are living up to that rule, so that that way out of the difficulty is not available. There is one loophole in that rule, however, that may help them. That is this, the rule is so worded that the movements and cases which must now be bought together, need not fit. There is nothing to prevent the purchase of a movement for the lady's smallest watch with the gentleman's heaviest case. This may be taken advantage of, unless it is changed.

The jobbers all say that they are living up to not only the letter, but the spirit of the new rules. That may be so. But they do not attempt to conceal the fact that there is much dissatisfaction. One said only the other day, to me, that the jobbers were all in the "combine" for two good reasons; because they had to be, and because they couldn't help themselves. He meant it, too.

Almost all of them agree that the action of the Association in trying to "freeze out" certain case makers was a wise one, and say it was necessary to protect themselves on account of their having broken former rules; but there are still some in this city who think that these competitive case makers may, perhaps, be not altogether in the wrong.

Boston is already noted for its dining clubs. Almost every profession and department of trade is thus organized, with a meeting and dinner once a week, month, quarter or year. These form one of the most enjoyable features of business life in Boston. There has been talked of for a year or more, a similar dining club for the jewelers, but until recently nothing more has been done. At almost every meeting of the New England Association of jewelers the project has been discussed, and the opinions expressed have been almost always in favor of its formation. At this point the matter hung, no one caring to take the initiative, but at the last meeting it was agreed, unanimously almost, that something decisive should be done at once, or else that the matter should be dropped entirely. Accordingly a committee was chosen consisting of Mr. Irving Smith, of Morrill

Bros., & Co., Mr. George H. Richards, Jr., and Mr. E. A. Whitney, of Whitney Bros. These gentlemen have always taken an interest in the project of forming the club, and under their management the plan will no doubt be successfully carried out. They have each devoted considerable time to the matter, and within the past two weeks have seen nearly every jobber in the city.

With one exception favorable answers have been received, and the signatures to the rough draft of constitution and by-laws that have been already obtained are numerous enough to insure success. It is not proposed to organize as elaborate or pretentious an association as those formed in some other branches of trades, but there will be dinners four times a year, with a trip down the harbor in the summer, and an occasional ladies' day. Meetings will be held every month for the discussion of subjects of interest to the members, either in the office of some member or at some hotel. Another meeting will be called by the committee at some date not yet settled upon, to act upon this report.

At present only the jobbers are interested in forming the Association, but at a later period the manufacturers may be invited to join.

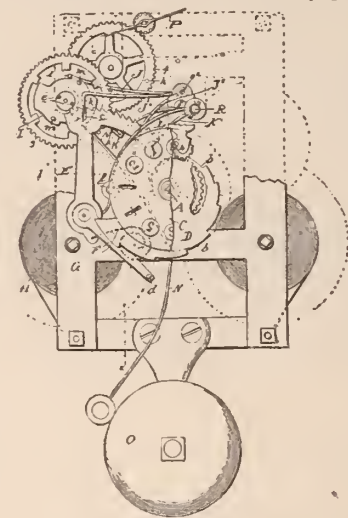
LEON.

Boston, March 17, 1888.

Intercalary Striking Clock.



THIS INVENTION relates to certain new and useful improvements in striking attachments for clocks; and it consists in the construction and arrangement of the engaging and releasing arms of the striking mechanism, and in the peculiar construction, arrangement, and combination of the various parts; patented January 10th, 1888. The cut herewith shows a front elevation of a clock movement with parts broken away to better illustrate the construction and position of other parts. *A* represents the center post to which is secured laterally-projecting (*L* shaped) pin, *B*.



Upon the sleeve of the hour wheel is secured a small dial *C*, which is provided with a series of radially-sliding pins, *c*, numbering from 1 to 12 but arranged in the opposite direction to the hours upon the clock dial. *D* is a snail, preferably on the same arbor as the dial *C*, in order to secure a simultaneous movement of the two.

Properly adjusted on the front plate is the rack *E*, said rack being provided with a deep slot *e*, and with the arm *F*, the latter carry a pin *d*, at its free end. The rack is actuated upon being released from the pawls by means of a spring, *G*.

On the same arbor as the wheel 3, is secured a disk *I*, and also a two-leafed pinion *i*, the latter engaging with the rack *E*, in the operation of the device. Projecting from the wheel 4 is a pin *h*, at *o* is shown an arbor properly journaled in the frame and carrying three arms, *J J' J''*. The first *J* is provided with a toe, *i*, to engage with the cane or disk *I*, while the arm *J'* is provided with a toe, *k*, to engage with the teeth of the rack *E*. The other arm *J''* is a lifter and has a toe *j*, which is engaged by an arm *K* that is carried by another arbor *R* and is lifted by pin *B* of the centre post *A*. The arbor *R* also carries the arms *K* and *L*, the latter being provided with a boss *L*, jointed to allow the hands being turned backwards, or to repeat, against which the pins *a* operate as the dial *C* rotates, while the former arm *K* has a projecting toe *k*, as herein-after explained. *P* is a fly wheel, *m m* are pins projecting from disk *I*, causing the hammer to sound the bell *O* as wheel 3 rotates. The

dial *C* is not stationary, but turns with the hour sleeve. Pins *a* engage with the boss of arm *L*, throwing arms *L* and *K* outward until the toe of arm *K* comes in the path of pin *B* of centre post *A*.

Then pin *B* engages with arm *K* (the boss *L* then leaving pin *a*), lifting arms *L* and *K* still farther upward. Arm *K* engaging with arm *J* of second shaft, lifting all until toe *i* is lifted from the first step of disk *I*, when toe *k* will be in line with pin *h* of wheel 4, which now rotates, called "warning," the *L* shaped pin *B* further lifts all the arms, lifting arm *J* out of the deep slot *c*, when the rack *E* now falls to its position.

Now as the (red) hand arrives at figure 12, the striking train rotates, while in the operation of striking, the highest part of the disk *I* lifts toe *k* out of the teeth of rack *E*, at the proper time in each revolution.

While pins, *a*, are at inner circle of dial, *C*, the clock remains silent, but strikes at any or all when at the outer, giving correct number bells.

The hour and minute hands are fastened friction tight while a red minute hand fits the square of the center post.

We might mention a few of the advantages of the foregoing article. This clock mechanism is an arrangement by which a clock can be made to strike any given hour or remain silent, and by the additional red minute hand can be adjusted to strike at any number of minutes sooner, or later than indicated by the regular hands. Thus a clock, keeping standard time, may be made to strike meridian time, or *vice versa*. This construction is useful with larger bells in clocks located in schools, factories, etc., or for striking office hours only, according to various requirements. One would not become so accustomed to hearing it, as a clock striking hours regularly. Hence it is more likely to attract the attention. It would also be useful in rooms where call and telephone bells are in operation, and if set to strike for a single occasion, may be justly termed "an alarm clock." It would be valuable in private houses, as well as public places. These advantages may be secured with but little additional cost on movements, and the appearance of the clock dials rendered more attractive, with usefulness and novelty combined. It is readily adjustable to self-winding clocks, as well as those operated by spring or weight.

The inventor would be pleased to hear, either by letter or postal, from the trade, expressing opinions of the above described clock. Kindly address the inventor, W. E. Counter, Three Rivers, Mich.



There is a good deal of complaint among the wholesalers of dull trade. This is not peculiar to the jewelers alone in the Northwest. The winter has been an exceedingly hard one for this section; the snow uncommonly deep and some of the branch lines of the railroads have been blockaded during a greater portion of the winter, making trade in all lines unusually dull. The season is later than usual and the spring trade has not fairly started yet. For these same reasons collections have been dull; in fact, there is more complaint on the score of collections than on account of the light trade. The principal retailers in both St. Paul and Minneapolis say that they have enjoyed a very fair trade for January and February, and anticipate with the opening of spring and the end of the Lenten season that there will be another revival. There promises to be much social gayety during the ensuing month in both St. Paul and Minne-

apolis, and this is not without its influence upon retail trade.

Mr. C. A. Hoffman, the optician, had one of the most unique experiences a week or so ago. Mr. Hoffman is a devotee of the amateur photographic craze and is an adept at the art. He was preparing to take an interior view of his store, showing himself behind the counter and had arranged his instrument, together with the instantaneous plate, in the front part of the store and stretched the air tube and bulb so that it could be subjected to a pressure of his foot across the store and under the counter, when he was interrupted by a customer coming in. While he was attending to the wants of the first customer, another came in and asked for opera glasses. Mr. Hoffman placed before him a number and proceeded to wait on the other customer. When he came to put away the goods, the second customer having left with the announcement that he would call again, he found that one of the most valuable glasses had disappeared. He had not paid enough attention to the would-be opera glass buyer to tell the police just how he did look, and was at loss for a medium by which he might secure the recovery of the glasses, which had evidently been stolen. Other interruptions which followed prevented him from taking the proposed view of the store, and without thinking anything more about it he put away the camera and deferred his little experiment in amateur photography until another time. When, however, he came to prepare to take another picture, he removed the plate previously placed in the camera, and was astonished to find that it bore not only the likeness of the customer who had called to look at opera glasses, but also the visitor in the act of putting the glasses in his pocket. In passing about back of the counter, he had inadvertently stepped on the bulb and the instrument had performed its instantaneous work with wonderful fidelity. The photograph taken from the plate was turned over to the police and the thief actually arrested and the stolen opera glass recovered.

Another small failure in the retail trade occurred here this week. J. H. Brown, who has been doing business at 611½ Nicollet avenue, was forced to make an assignment with the result of a small attachment. Mr. Brown had but small capital but had been doing a very fair business, but was taken sick soon after the holidays and has been laid up ever since. His wife, also, has been sick, and his friends think that had it not been for this, he would have been able to weather the storm, and the hope is entertained yet that a settlement can be made and business resumed. The assets and liabilities are small and about equal to each other.

The jobbers of watches are considerably interested in an agreement which went into force with the 1st of March. One wholesale house in St. Paul has heretofore handled little except watches and watch cases, and the competitors of this house think that it will be impossible for him to do business on the small margin of profit which the manufacturers have left for the wholesalers. The probabilities are, however, that Mr. Becken will increase his line of stock and carry other goods.

Salesmen who have been in the woods this winter selling goods to the lumbermen are about finishing up after an exceedingly successful season. In this state the bulk of the business has been done by Mr. Snyder, who has done a very large business. Some of the local jewelers at towns contiguous to the lumber camps make short trips also in Wisconsin. The principal jewelers in Eau Claire, Chippewa Falls, Hudson, Rice Lake, Ashland, and some other of the towns that are centres of the lumber trade, make a sortie of a month or so in the lumber camps and succeed in working off more or less stock. The season has been a long one in the woods. Men have earned good wages and more of them than usual, and the jewelers have profited by it to a very considerable extent. This lumber camp trade is becoming a very important element in the jewelry trade in the Northwest, and all the jobbing houses are profiting more or less by it.

Minneapolis, Minn., March 16, 1888.



THE PIN VISE.—Let the apprentice practice the use of the pin vise, so as to file a long, thin, taper pin, adopted for movements, and the sharper, stronger ones, but with a more rounding point, adapted for brooch pins, handsomer finished, with a burnisher; the points on the center of the pin, and not on one side; the next step is to see not only how well but how quickly this can be done without breaking, bending, or injuring tools or work, and as quietly as possible.

TO MAKE A DUPLEX ROLLER.—At the present day this operation is so rarely done that only a few words can be devoted to its consideration. Very pure rubies must be selected, and the hole drilled in the customary manner; if the drill is too short it must be introduced at opposite ends and the two holes made to meet. After smoothing the surface the notch is cut with a thin steel cutter, the roller being cemented to a support that replaces the T set. When the steel disc, charged with powder No. 4, is revolving very rapidly, advance the roller under it by a screw. The notch is polished with a small copper file of suitable form, and its corners rounded off with a tin one of square section, one edge of which enters the notch.

TO TAKE IMPRESSIONS FROM SEALS.—To take impressions from seals proceed as follows: To take an exact mould of any coin, medal, embossed or stained paper, or, in fact, any device raised or imprinted, cut a piece of card-board, with which form a ring just the dimensions of the impressions to be taken; then pour within the said ring melted fusible metal, the cording will prevent the metal from running away, and in a few minutes it will cool and take the impression without the slightest injury to the paper from which it was taken. The impression taken will be the same as the original, but reversed. Fusible metal is a compound of 8 parts bismuth, 5 of lead, and 3 of tin, which liquifies at the same temperature as boiling water.

TO STRAIGHTEN A SMALL ARBOR OR PINION STAFF.—When steel is sufficiently tempered it may be laid flat on a piece of copper, held in a vise and flattened by hammering, as in the case of an ordinary rod; but, if it is hard, the blade of the hammer must be used. Every watchmaker knows, for example, that a verge is straightened by striking with the blade against its concave side, while the convex side rests flat on a smooth anvil. By the action of the hammer the side that is struck becomes a little longer, thus straightening the staff. It is not usually necessary to remove the marks left by the hammer, but if this has to be done the operation should be continued beyond what is necessary to straighten the metal, then temper to a blue color and allow it to cool. A small smooth taper-arbor and a pinion-staff can be straightened by resting it on a wood block and rubbing the concave side lengthwise with a worn file of medium cut, applying considerable pressure, the arbor being firmly supported below to avoid breakage. The result is the same as with the blows of the hammer, but the marks left are barely visible.

DIAMOND AS A CAP JEWEL.—No use is made of the diamond in horology, except as cap jewel, and, hard as the substance is, a pivot will often cut an indentation in its face. The cause of this apparent anomaly is to be found in the structural character as a gem and its value. The lapidary, so as to save as much in weight as possible, does not care, in rose diamonds, to pay attention to the line of cleavage. If the face of the stone makes a slight angle with the strata, innumerable small angles of extreme thinness occur, and the pivot coming in contact with any of these thin portions, is liable to fracture it, and the fragment becoming imbedded in the tempered shell pivot becomes a drilling tool. Machine chronometers frequently take their rate so much from this cause alone as to become unre-

liable, the pivot having produced an indentation of the stone, creating more friction and destroying the accuracy of the instrument.

TO TAKE OFF BACK OF SCAPE-TOOTH.—Only in urgent cases is it permissible to take off the back of an anchor scape-wheel tooth. This must be done if the wheel and patent action is otherwise correct, as the wheel must be made to escape, as the watch cannot go. But before the workman does it let him see how far the teeth lap on the locking-face of the pallets. If the depth is needlessly deep the pallets had better be moved back from the wheel to let it escape. In such a case as that taking off the backs of the teeth will lessen the angle of lifting, or impulse, and cause a loss of that proportion of the motive power, and also leave the lockings excessively deep, and cause another loss of power. But moving the pallets back would leave the full lifting angle undisturbed, and also lessen the useless locking and drop. But if the teeth, when they fall upon the pallets, only lap enough on them for safety, the pallets cannot properly be moved back any, and, if the wheel will not escape, the backs of the teeth must be taken off barely enough to face them. Sometimes only one pallet arm will need moving back.

HOW TO CLEANSE DIRTY CHAMOIS.—Many workshops contain dirty wash leathers, which are thrown away for want of knowing how to cleanse them. Make a weak solution of soda and warm water; rub plenty of soft soap into the leather, and allow it to remain in soak for two hours, then rub it well until quite clean. Afterward rinse it well in a weak solution composed of warm water, soda and yellow soap. It must not be rinsed in water finally, for then it would be so hard, when dry, as to be unfit for use. It is the small quantity of soap left in the leather that allows the finer particles of the leather to separate and become soft like silk. After rinsing wring well in a rough towel and dry quickly, then pull it about and brush it well, and it will become softer and better than most new leather. In using a rough leather to touch up highly polished surfaces it is frequently observed to scratch the work. This is caused by particles of dust, and even hard rouge, that are left in the leather, and if removed by a clean brush containing rouge, it will give the brightest and best finish, which all good workmen like to see on their work.

POCKET CHRONOMETERS.—The escape wheel of a pocket chronometer varies from 0.28 to 0.35 inch in diameter. The impulse roller is made larger in proportion to the escape wheel than in the marine chronometer, so as to lessen the tendency of the escapement to set. If the chronometer escapement is brought to rest by external motion just as the unlocking is taking place, it *must set*, for the balance spring is then quiescent. In the lever escapement the tooth of the escape wheel is in the middle of the impulse plane of the pallet when the balance spring is quiescent, and in this respect the lever has the advantage. If the velocity of the balance in a chronometer is much reduced when the unlocking is completed, then a large impulse roller is of great assistance to the wheel in overcoming the inertia of the balance. As the diameter of the roller is increased, the balance arc, and also the intersection of the path of the wheel by the impulse pallet, is decreased. The velocity of the edge of the roller, too, more nearly approaches the velocity of the wheel tooth, so that less of the power is utilized. It is, therefore, not prudent to adopt a much smaller balance arc than 28° or 30°. The tendency of pocket chronometers to set is also lessened by adopting a quick train; 18,000 is the usual train, but they are occasionally made with 19,200, by having sixteen teeth in the escape wheel in place of fifteen. This seems to be an objectionable way of getting the quick train. The teeth of the escape wheel being closer together, a smaller roller must be used to get the same intersection, and as there is less time for the detent to return there is greater danger of mislocking. For the convenience of getting the second hand to jump half seconds, a 14,400 train is sometimes used in pocket chronometers. In this case the escape wheel has twelve teeth, the numbers of the rest of the train remaining the same.



TRADE GOSSIP.

—The following named dealers were noticed in town during last month: J. K. Rauch, Bethlehem, Pa.; W. J. Bigelow, E. O. Quimby, Boston, Mass.; D. Emery, Bradford, Pa.; J. B. Mayer, Buffalo, N. Y.; A. Hallenbeck, Catskill, N. Y.; T. G. Hawkes, Corning, N. Y.; J. W. Webb, B. C. Tabor, Dallas, Tex.; E. H. Ayres, M. G. Levy, L. La France, J. T. Wise, Elmira, N. Y.; D. E. Dunn, Fort Plain, N. Y.; A. Levy, Hamilton, Ontario; H. Kohn, Hartford, Conn.; W. G. Bailey, Helena, Mont.; C. Petersen, Honesdale, Pa.; J. E. Bullard, Middleton, Conn.; A. J. Warner, Minneapolis, Minn.; G. H. Ford, New Haven, Conn.; C. J. Wells, Oneida, N. Y.; A. A. McCandless, J. H. Wattles, W. W. Wattles, Pittsburg, Pa.; H. Bausch, J. Fahy, G. Roseman, Rochester, N. Y.; J. Nordman, San Francisco, Cal.; J. Eckstein, Savannah, Ga.; D. McCarthy, Syracuse, Y.; C. C. Shaver, Utica, N. Y.

—Mr. George W. Ludwig, of Chambersburg, Pa., is an enterprising jeweler and optician. He is strongly in favor of a Board of Trade for his town, and is making an effort to organize one.

—Lissauer & Sondheim have placed upon the market their six-size, "Pansy" cases, with raised gold ornamentations. They are made in excellent style, and make a "fine show for very little money."

—Mr. Leon J. Glaenger, dealer in fine imported fancy goods, etc., has removed to 80 Chambers street, where he will shortly have on exhibition a new line of onyx, marble and carriage clocks, gilt regulators, etc.

—Mr. Herman Werner, of Ansonia, Conn., will remove after April 20th to New Haven. Mr. Werner writes that he will make a short visit to Europe and on his return will open a larger store in either New Haven or some southern city.

—Mr. D. DeSola Mendes exhibits the bronze medal awarded to him by the American Institute for excellence in diamond cutting. This art has made wonderful progress in this country of late years, and Mr. Mendes has done good work in promoting its advancement.

—Aikin, Lambert & Co., have secured quarters for their Chicago branch in the new Stewart Building at the northwest corner of State and Washington streets, which has been leased by Lapp & Flershem for a term of years. Mr. B. Grieshaber will be in charge of Aikin, Lambert & Co.'s office as agent.

—The Illinois Watch Company besides making several grades of their popular four-size movement, have been adding several grades of six-size to their list. One of the latest is the seven-jeweled movement called "No. 140." Ladies' watches are having a large sale and the company is somewhat behind orders.

—The Maiden Lane Directory Co. are preparing to issue another edition of their directory which is to appear August 1st. It is proposed to make it more complete and useful than ever. It comprises the jewelry trade in Maiden Lane and vicinity, and is called, "The Home of the Watch and Jewelry Trade."

—The Chatham National Bank which might be called the "Jewelers' Bank," is doing a large and steadily increasing business. Most of the watch and jewelry trade keep their accounts at the Chatham. The administration is conservative, but progressive on business lines, and deals with their customers liberally. January 1, 1882, its deposits were \$4,300,000; January 1, 1888, its deposits were \$6,200,000; January 1, 1882, its surplus was \$150,000; January 1, 1888, its surplus was \$450,000. Recently Chatham stock sold for \$250. G. M. Hard is its able President, and H. P. Doremus the efficient Cashier, while the jewelry craft is represented on the directors' board by Alfred F. Cross, Thomas W. Adams and Henry Randel.

—S. Klaber & Co., manufacturers of Mexican Onyx goods, have removed to 47 West 42d street. They are continuing to turn out a fine stock of elegant tables, pedestals, lamps, etc., and a visit to their establishment is interesting because of the many artistic pieces of onyx work there exhibited. The two varieties of onyx controlled by this firm, which are far superior to any European varieties, are well worth seeing.

—One of the most curious of the many curious things for which patents are granted, is one noticed in a recent number of the Patent Office Reports. It is called an "Automatic Horse Feeder." An alarm clock is attached to the side of the feed-trough which has an opening at one end with a sliding door. Through the door comes the feed from a feed-box overhead, and the door is opened and closed by a contrivance in the alarm clock.

—A good opportunity to purchase a flourishing business in Michigan is offered in our special notices column in this issue. The notice is signed by "L," care of THE CIRCULAR, and a prominent firm on Maiden Lane vouches for the desirability of the store that is offered. The person wishing to sell, has other interests to attend to, and wishes to close out his jewelry store to a cash purchaser. The location is in a city of 15,000 inhabitants in central Michigan, and any persons desiring to purchase will do well to inquire of the advertiser.

—The many friends and customers of Wm. H. Robinson & Co., of Providence, R. I., makers of the seamless plated gold chains, whose factory was completely destroyed by the disastrous fire in that city February 15, will be pleased to know that they are again hard at work employing a force of about 100 hands. It is somewhat remarkable and certainly shows the enterprise of this firm when one realizes what they have accomplished within the short time since the fire. They are working hard to fill back orders and keep up with the present demand for their goods.

—Jacot & Son have just put upon the market a low priced music box, with interchangeable cylinder, which they recommend to the trade as a very salable article. While it is cheap, it is of good quality, and has many of the patented improvements and parts used in the higher grades of boxes. Mr. A. H. Jacot, of this firm, started out on his regular western trip on March 20th, and will show samples of this box, as well as many other varieties. He expects to receive many orders, for his house has made great progress recently, and their boxes are becoming quite celebrated.

—Mr. F. C. Wade, of Atlanta, Ga., has taken Mr. W. W. Woodcock into partnership with him, under the style of Wade & Woodcock. Those two young men are enterprising and active, and are well up in the practical knowledge of the jewelry business. They were brought up in the factories of some of the best manufacturing houses in Newark and New York, and have had a thorough training. Mr. Wade has already made a reputation for himself in Atlanta, in his specialty of badges and medals, etc., and the new firm will continue in the same line on a larger scale. With their long experience and with excellent facilities for their work, they look for a large patronage from the southern jewelers who can save the time formerly used in sending such orders to New York.

—The "Something New," which W. C. Edge & Sons, are advertising, is having remarkable success, and meeting with favor wherever shown. It is a patented process of inlaying gold on silver in a curious manner, which produces an endless variety of shades and figures in both the metals. The manufacturers show sample patterns in cuff-buttons, lockets, charms, lace-pins, etc., but the process is applicable to any kinds of jewelry or silverware. The metals are inlaid in a peculiar manner so that the parts exposed on the surface are seen in curious patterns, and the gold is shown in several colors to contrast with the different finishes produced on the silver, which is shown in nugget, oxidized, plain and frosted. These goods must be seen, however, to be appreciated, and Messrs. Edge send selection packages to reliable dealers upon application.

—Mr. J. H. Brown, of Minneapolis, Minn., made an assignment last month.

—The jubilee presents to the Pope thus far received, are valued at \$20,000,000.

—Pepper & Horner, of Cleveland, Tenn., were robbed of about \$3,000 worth of goods, on March 6th.

—Mr. Arthur H. Smith, the former assignee of Payne, Steck & Co., was removed from that position last month on the motion of several of the creditors, and Mr. Charles F. Allen was appointed in his place.

—Jules Rosendale, of Philadelphia, was robbed of a large quantity of stock on Feb. 26th, valued at about \$5,000. His store was protected by the Burglar Alarm Bureau, but the thieves disconnected the wires, and presumably took their time about robbing the place, as the robbery was not discovered until the next morning.

—Among the dealers who sailed to Europe last month, we note: Mr. H. Didisheim, Mr. A. Lyons, Mr. E. A. Thrall, Mr. A. C. Smith, Mr. B. L. Strasburger, Mr. J. C. Mount, Mr. L. Hammel, Mr. M. Weis, Mr. A. Mathey, Mr. Charles H. Meylan, Mr. Joseph Fahys and Mr. Fayette S. Giles. Those who arrived home from Europe, are: Mr. A. Hodenpyl, Mr. B. H. Knapp, Mr. Max Freund.

—The Hampden Watch Company has issued a circular to the trade in which it says: "At a recent meeting of the Directors of the Hampden Watch Company it was voted to withdraw from further co-operation with the members of the American Watch Case Manufacturers' Association, as it is at present organized and conducted, and have this day formally notified their secretary of our determination."

—*The Swiss Journal of Horology* for March contains an article showing that non-magnetic chronometers were devised in 1833 by Messrs. Arnold & Dent, of London. From their experience with ships' chronometers they were convinced that they were affected by natural magnetism, and made experiments which demonstrated the truth of their suspicions, and they devised a means of making them non-magnetic. The article gives the details of their experiments and the results they achieved.

—Mr. Louis Combremont, representative of the Dubois Watch Case Co., was arrested recently by the customs officers at Suspension Bridge, on a charge of smuggling. Mr. Combremont had on his person several sample cases made by his firm, and the inspectors held him notwithstanding the fact that he proved he had no intention of smuggling. He was released upon furnishing bail for \$600, and it is thought the case will be dropped, as the inspectors are said to admit their blunder.

—A large clock is being constructed for the Georgetown College by H. G. & J. E. Wagner, of Georgetown, D. C. (West Washington). It is said that when completed it will be the largest in the District of Columbia. Its cost will be \$2,000. The movement is to be 8 feet wide, 6 feet high and 3½ feet deep. The pendulum is 10 feet long, with a bob weighing 300 pounds. Two large black dials 8½ feet in diameter will be placed in the great central tower of the college, about 125 feet above the ground. There will be three bells, on which the hours will be struck and the quarter hours chimed, after the pattern of those at Westminster.

—One of the most wonderful things that has been discovered of late is the new glass which has just been made in Sweden. Our common glass contains only six substances while the Swedish glass consists of fourteen, the most important elements being phosphorus and boron, which are not found in any other glass. The revolution which this new refractor is destined to make is almost inconceivable, if it is true, as is positively alleged, that, while the highest power of an old-fashioned microscopic lens reveals only the one four-hundred-thousandth part of an inch, this new glass will enable us to distinguish one two hundred and four-million-seven-hundred-thousandth part of an inch.—*The Patentee*.

—Stern & Stern are making extensive preparations to move into the store at 13 Maiden Lane, the place formerly occupied by the Spencer Optical Manufacturing Company. Messrs. Stern & Stern are obliged to move out of their offices at 6 Maiden Lane on account of their largely increasing business, and the new place is to be fitted up in elegant style, and will be occupied by about the 10th of April.

—The new office of the Dueber Watch Case Company, at 178 Broadway, is one of the most elegantly fitted up in the down town trade. The office is quite roomy, and extends from the front of the building where light is received from the two large windows on Broadway, back about forty or fifty feet. The walls and ceiling are beautifully frescoed and papered in colors of delicate shades. To harmonize with these, the carpets and furniture and other decorations are also of a light color, and the long table which runs nearly the full length of the office is separated from the outer office by a gilded wire screen. Desks and tables are provided for the office manager, book-keepers, clerks and customers, and four large Marvin safes stand behind the long counter, covered with an electric protection covering of wood to match the rest of the furniture. Outside the building, a large gilded statue of the Gladiator, the company's trade-mark, is mounted upon a pedestal, and attracts the attention of the thousands who daily pass up and down Broadway. The company is preparing to do their own jobbing business, and this new office, with a large force of clerks, is the place where the business is to be done. Every facility for the quick transaction of business has been introduced, and the company invite the co-operation of the trade. Messrs. B. & W. B. Smith fitted up the place, and they may well be proud of their work.

On the bank of the Merrimac River and near its mouth, and situated in the quaint old town of Newburyport, Mass., is the factory and office of a comparatively new concern, the Towle Manufacturing Company. This company commenced business eight years ago with a capital of \$20,000, and so successful have they been that with their increased capital and surplus they now have over \$300,000 in their business. They manufacture flat table ware in solid silver and electro-plate of the finest grades only. To fully appreciate the development and phenomenal success of this concern a visit to the factory is necessary. They occupy three substantial brick buildings—the main building, 130x40 feet, four stories high, a rear building, 40x60, three stories high. The two buildings are connected by a one story structure about 100 feet square, which is used for a boiler house, coal shed, annealing, casting melting, etc. The first floor of the main building is occupied by heavy machinery, rolls, cutting presses, etc. The second floor is divided into the counting room, the packing and shipping room and a large store room for finished work. The third floor contains the polishing and engraving department. On the fourth floor are the plating and trimming departments. The first floor of the annex is used for drop presses, machine shop, and has several large vaults for the storage of their expensive dies, etc. The second floor contains the die cutters' room, and the shop where the wood work is done for the fancy boxes and cases, which are finished on the upper floor. The boxes are finished in the finest qualities of velvet, plush, leather, hard wood, etc. The power for the factory is furnished by a double engine of a combined capacity of 160 horse power, and these are run by two boilers of net 200 horse power. The company employ over 200 hands the year round, and the fact of their having steady employment, a pleasant factory and good wages, makes them a happy and contented people—and strikes have been unknown. About three-quarters of their productions are solid silver and the rest electro-plate of a high grade. They employ six traveling salesmen, and have offices in Chicago and San Francisco. The entire arrangements are of a neat, orderly and businesslike appearance, which will be observed in every department and visitors are assured of a cordial welcome from their counting room representatives.

—Many jewelers are reported to have visited Florida during the past winter.

—Williamson & Co. will remove on or about May 1, from 22 to 26 Union Square.

—Mr. C. Schomberg, Columbus, Ga., has removed from 105 to 1,115 Broad street.

—Mr. Herman Ehrman, of 1007 Third avenue, will shortly remove to Los Angeles, Cal.

—Fowler Bros. will remove their New York office to 198 Broadway on the 1st of May.

—J. R. Watts & Co., formerly of Ashland, Neb., are now located at 44 Marietta street, Atlanta, Ga.

—Mr. Peter Miller, of Kingman and Greenburgh, Kansas, has sold his store at Greenburgh to Mr. C. W. White.

—Mr. B. Cerf, practical watch and chronometer repairer, of 10 John street, will remove to 42 John street on the 1st of May.

—The Pairpoint Manufacturing Co. illustrate on page 21 in this issue, their new "Garland" pattern to which we call attention.

—The death is announced of Henry Austin, of Greenville, Pa. Mr. Austin established himself as a jeweler in Greenville in 1845. He was sixty-six years of age.

—Mr. P. M. Whitman, of Beaufort, S. C., has admitted Mr. W. R. Bristol into partnership, under the style of Whitman & Bristol. Mr. Bristol was formerly his assistant.

—The Manhattan watch is sold direct to the trade from the factory in this city, where it is made. Illustrated catalogues or samples are sent to dealers on application.

—Mr. Charles Glatz, manufacturer of gold watch cases, jobber in American movements, etc., gives notice that he will remove to the Dennison Building, 198 Broadway, on or about May 1.

—In the *Journal of the Franklin Institute* for March, appears an article by Prof. Edwin J. Houston, which treats in a very complete and interesting manner of the Paillard non-magnetic watch.

—Mr. Jess M. Bell, formerly and for 36 years past with the firm of Bell & Bros., San Antonio, Texas, has withdrawn from that firm, and will shortly open a store next to the Traders' National Bank.

—Mr. S. F. Merritt, of Springfield, Mass., manufactures several designs of patented eye-glass hooks which have many advantages over old styles, and give entire satisfaction to those who have used them.

—Pearce & Hoagland, of Providence, have been succeeded by Mr. Frank T. Pearce, under the style of F. T. Pearce & Co. Mr. John Hoagland has started in business at 17 Warren street, under the firm name of John Hoagland & Co.

—The dissolution of the firm of Hodge, Slemmons & Co., of Pittsburgh, Pa., is announced by a circular dated March 21, and a new co-partnership was formed the same day by Mr. John O. Slemmons and Mr. Oscar C. Ganter, under the style of Slemmons & Ganter.

—Mr. Chas. Reed, formerly with Hahn & Co., has taken the management of Mr. R. A. Kipling's Providence office. Our Providence correspondent last month said that Mr. Simon Sencerbox had taken that position, but he was misinformed, and Mr. Reed took charge on March 12.

—E. Ira Richards & Co. are showing among their most complete stock of plated jewelry, some of the prettiest patterns ever produced by them. Their stock includes everything in the plated jewelry line, and these of the finest quality. Selection packages are sent upon application.

—The Gorham Manufacturing Co. show some beautiful illustrations in this issue, of a few designs in tea caddy spoons. The odd shapes of the handles and bowls, together with the unique decorations engraved or embossed, make these articles worthy to be classed as works of art.

—Mr. J. H. French, the auctioneer, is conducting a ten days' auction sale of the stock of Mr. J. H. Johnston, 150 Bowery. The sale commenced on March 26, and the stock is to be sold without reserve. Mr. Johnston contemplates some extensive alterations and change in his business after the 1st of May.

—Mr. E. A. Thrall, now in Europe making purchases in precious stones, etc., is expected to return about the 1st of May. He recently sent home a case of goods containing some very fine lots of diamonds, sapphires and opals. These were secured in the London market, and are exceptionally fine.

—We are pleased to learn that J. T. Scott & Co.'s business is still on the increase, being considerably ahead of last year, meeting with unusual success with their "Success" patent initial ring, and being unable to supply the demands at this season of the year for their new split second "Leader" watch.

—There was much discussion recently concerning the offer of Omaha, Nebraska, to the Aurora Watch Co. to remove its factory to that place, and mass meetings of the citizens of Aurora, Ill., were held to protest against the company moving. Later, though, the affairs of the company were put upon a substantial basis, and it will remain in Aurora. The output of the factory at present is 100 movements a day.

—The *Pittsburgh Dispatch* recently devoted considerable space to reviewing the jewelry industry in that city, paying a high compliment to J. T. Scott & Co., who were the pioneers of the wholesale jewelry business of Pittsburgh. They began business in 1867 as jobbers, so that they attained their majority as such this year. The *Dispatch* says: "In the early history of this firm a branch house was opened by it at No. 11 Maiden Lane, New York, under the same style as the Pittsburgh house, J. T. Scott & Co., and although many changes have taken place in the New York house in the intervening years, it is at this time operated as a wholesale jewelry establishment by two sons of the man who led off in the jobbing jewelry line in this city.

—The Hampden Watch Co. have now established their New York office in the offices of the Dueber Watch Case Co., at 178 Broadway. Mr. Irving G. Hatch, formerly the New York representative of the Dueber Company, has taken charge of the Hampden Company's business, and the two concerns will now conduct their business in the one office. Major-General G. W. Mindil, a gentleman well-known to the trade, having been connected with various firms and enterprises in the trade for many years, has been appointed the New York agent of the Dueber Co., and is in charge of this office. The handsome reception room connected with this office is now ready for visitors, who will receive Mr. Mindil's cordial attention. A five hundred dollar painting of the Dueber Company's factory will shortly be exhibited in the reception room.

—Among the novelties in clocks introduced this season by the E. N. Welch Manufacturing Co., are a line of small hanging clocks, of which an illustration and description appears in this issue. They are of handsomely decorated porcelain, the decorations being various floral patterns. The clock is suspended by a heavy gilt chain. They are fitted with a superior grade of movement, solid cut pinions. The dial is porcelain, three inches in diameter, with French sash. Another line of novelties is a series of small size black enamel clocks, fitted with an improved eight-day movement, cathedral gong. There are several patterns of these, one of them, "Number 9," being solid black, with no ornamentations except engraved gold lines upon the base. Another, "Number 8," is patterned after an Egyptian design, with ornamentations of inlaid marble at each side, of various styles, Pompeian, Egyptian, etc. The contrast of these variegated shades upon the background of black with its high polish is very effective, and gives them an appearance of richness similar to French marble clock cases. These goods are entirely different from any ever offered, and are most desirable for the many places where a small sized and accurate timekeeper is required.

—Roberts & Yerrington will remove May 1 to 176 Broadway.

—Mr. George W. Chatterton, of Springfield, Ill., has enlarged and refitted his store.

—Mayhew & Carrington, of 3 John street, will remove to 196 Broadway, on or before May 1.

—Guenther Bros., Toronto, Ont., have bought out the business of Mr. J. Johnson, of 518 Yonge street.

—The Trenton Watch Company now has an office at 202 Broadway, with Mr. J. B. Yates as selling agent.

—The Spencer Optical Manufacturing Co. are having a large business at present. Attention is called to their advertisement.

—Mr. Z. Beasley, Rich Hill, Mo., has moved to Hannibal, where he has purchased the business of the Trowsell & Russell Jewelry Company.

—The new general salesroom of the New Haven Clock Co., at 29 Murray and 33 Warren streets, will be ready for occupancy in a short time.

—L. Straus & Sons have a fine exhibition of their spring importations of pottery, glassware, bric-à-brac, etc., which is worthy of inspection.

—Pratt & Ganung, of Litchfield, Conn., have nearly completed their new store, which is expected to be the finest in that section of the country.

—A large fire in Westfield, Mass., on March 26, did considerable damage to the stock of Mr. J. A. Lakin, jeweler and electrician. He is insured for about \$4,500.

—B. H. Rounds & Co., Owensboro, Ky., and Rockport, Ind., made an assignment to Mr. J. S. Bottenwiser last month. Liabilities, over \$4,000; assets, about \$3,000.

—The Jobbers' Association of Philadelphia, at a recent meeting elected Mr. Simon Muhr executive officer. Mr. George Scherr was re-elected Secretary and Treasurer.

—The H. A. Prentice Jewelry Co. are gradually recovering most of the goods stolen from them by Gregg. Gregg was recently sentenced to four years in State's Prison.

—Longstreth & Downing, of St. Louis, Mo., have recently put a new plate glass front in their store, 612 Olive street, which is now one of the handsomest in the neighborhood.

—The death is announced of Mr. O. C. Forsyth, formerly a leading jeweler in Brooklyn. He was seventy-two years of age, and he had been living lately at East Orange, N. J., where he died.

—Peter B. Simons & Son, of San Francisco, Cal., who have recently fitted up new offices in the Hayward Building, are said to have the handsomest establishment in the trade in that city.

—The Jewelers' and Tradesmen's Company continues to grow in popularity as well as in membership. Application blanks and circulars can be obtained of Mr. Gilbert T. Woglom or Mr. E. S. Johnson, Jr.

—Carter, Sloan & Co. report that their business thus far this year exceeds that of last year, notwithstanding the blizzard and other drawbacks. They are producing many new patterns for the spring trade, of which several are already upon the market.

—Any reader who has a few thousand dollars and wishes to start in the jewelry business, is advised to inquire of Rogers & Bro. or M. B. Bryant & Co., for the particulars of a very desirable opportunity to secure a fine business. See the Special Notice column.

—Mr. C. C. Adams, of Brooklyn, recently chloroformed a Maqueuch bug, owing to the complaints of several over-sensitive ladies, who were shocked at what they regarded as inhuman cruelty in the bug being harnessed in gold and chained to a velvet pad in Mr. Adams' show window.

Crescent Gold-filled Watch Cases are illustrated in a few designs upon another page.

—G. W. Adams, Oneonta, N. Y., lost his entire stock, valued at about \$1,200, by fire, last month.

—The Cheshire Watch continues to grow in popular demand. The company says that over 40,000 were sold during last year.

—Mr. Sherman Hathaway, of Massillon, O., formerly with Mr. C. Rudolph, will shortly start in business on his own account.

—Mr. Henry Dreyfus, of Henry Dreyfus & Co., sailed for Europe on March 24th, to make some large purchases of precious stones, etc., for his house.

—Mr. C. S. Ball, of Syracuse, N. Y., maker of the "Ball" Eye-glass hook, is willing to send samples to the trade free, upon receipt of business card.

—Heller & Bardel have secured the second, third and fourth floors of the building, No. 22 Maiden Lane, to which they will move on or about the 1st of May.

—Mr. Jesse M. Fulgham, of McKenzie, Tenn., writes us that he has accepted the pastorate of the Thomasville, Ga., Baptist Church, and has left the jeweler's bench.

—Mr. Charles P. Williams, of Mansfield, Mass., died last month. He was one of the wealthiest men of that town, and was interested, financially, in the jewelry business.

—L. Hammel & Co., are preparing and will soon have ready for the trade, an invention for the practical application of mainsprings which will be something new and useful.

—Mr. J. B. Wood, representing Mr. Chas. F. Wood, arrived from Europe, on the *Aller*. He visited the principal marts for gems and precious stones in Europe, purchasing freely.

—William H. Ball & Co. have secured an office in 15 John street, whither they will remove about the 1st of May. They have occupied their present quarters for over twenty-five years.

—The Seth Thomas Clock Co. will send upon application, a descriptive pamphlet, circulars, etc., of their Precision Clock, of which an illustration appears in their advertisement.

—Durfey & Reynolds, who occupy an office on the first floor of No. 9 John street, where they have been ever since 1860, have secured an office in the building opposite, Nos. 14 and 16.

—O. W. Bullock & Co., of Springfield, Mass., manufacturers of a line of tools for watchmakers and jewelers, issue a handsomely illustrated catalogue which will be sent on receipt of application and 4 cents in stamps.

—D. De Sola Mendes & Co., the diamond cutters, of 49 Maiden Lane, advertised themselves for a week during last month, in a practical manner, by repairing all chipped diamonds sent to them by out of town dealers, without charge.

The Columbus Watch Company have an announcement upon another page which sets forth the grounds upon which they base their claim that the Columbus Watch is the best. We would direct the attention of readers to their advertisement.

—Fleury, the postmaster of Paso del Norte, Mexico, who was arrested a short time ago for stealing diamonds from the mails, has escaped to the United States, together with his chief clerk, O'Farrell, who was implicated with him in the robbery.

—In one of our paragraphs in the Trade Gossip of last month, we said that Mr. Ezra Kelley, of New Bedford, has for "fifteen years made a specialty of preparing oils," etc., etc. This fifteen should have read fifty, as anyone knows, who knows of Mr. Kelley.

—"Look out for the eclipse!" The author of this sentence in one of our advertising pages, is an enterprising watch and jewelry firm who are preparing the "eclipse" themselves. It is not an eclipse of the heavenly bodies, but of something connected with the trade, and dealers had better look out for it.

—Mr. F. W. Gesswein, of 39 John street, sailed for Europe on March 17 for a stay of about two months.

—Mr. W. W. Bostwick, of Coshocton, O., made an assignment last month. His liabilities are put at \$10,000, with assets of \$7,000.

—Mr. Buehl, of Rockford, Ill., who opened a store in San Jose, Cal., about December 1, has sold out his stock at auction and gone out of business.

—Rhein Bros. of San Jose, Cal., have moved from their old location on Santa Clara street, and taken part of the picture store of Mr. Denne on South First street.

—Mr. E. R. Chillas, brother of one of the firm of Lee & Chillas, Toronto, Ont., died recently. He was formerly a traveling salesman, and had a large acquaintance in the trade.

—King & Eisele, of Buffalo, report business good, with their six travelers and all the "snaps" working. They are making a number of special offers at present. See advertisement.

—Atkinson Bros., the general agents of the Keystone Watch Co., announce that they will sell the Keystone movements without cases, as they are not bound by the recent action of the Jobbers' Association.

—Mr. H. H. Heinrich, of 14 John street, reports that his palladium spring for chronometers is meeting with great success. Its quality of being absolutely rust-proof makes it invaluable to the landsman as well as the seaman.

—Upon page 9 of this issue will be found a list of a few of the jobbing houses which keep a stock of the celebrated "Princess" initial rings. The word "Princess" is stamped inside the shank of all genuine rings of this popular brand.

—Mr. Charles K. Hubbard, one of the oldest jewelers of Hartford, Conn., died on March 15, aged 67. He was a native of Connecticut, and established himself in the jewelry trade in Hartford in 1853, under the firm name of Hubbard & Hatfield.

—The American Mfg. & Supply Company, manufacturers of self-winding clocks, are preparing a miniature pocket catalogue in convenient form for ready reference. It will contain illustrations and full descriptions of the goods handled by them.

—Mr. M. D. Rothschild has opened a Paris branch office at 32 Rue Etienne-Marcel, whence he will supply his New York and Providence houses direct with precious and imitation stones of all kinds, materials and blank work for manufacturing jewelers and goldsmiths.

—A. C. Titcomb & Co., of San Francisco, Cal., are succeeded by J. A. Ingraham & Co., owing to the retirement from business of Mr. Albert C. Titcomb. Mr. Titcomb is well-known in the trade and has built up quite a fortune. It is reported he will move to Newburyport, Mass., where he was born.

—A unique plan has been devised at the Waltham Watch factory, of using screw drivers with celluloid tops of different colors, to signify different sizes of blades. The workmen are thus facilitated in their work by being enabled to pick out a screw driver of the required size by merely glancing at the color of the top.

—An early settlement of the affairs of Henry Rowlands, of Brooklyn, who failed recently is looked for by his creditors. They held a meeting last month at which it was decided to accept 40 per cent. of their claims in notes not to run longer than one year. It is thought, however, that he will settle for 35 cents on the dollar in cash.

—The Dennison Building, No. 198 Broadway, is rapidly being put in shape for the jewelry firms who are to take possession of offices therein on the 1st of May. An elevator is being placed where the first flight of stairs formerly began, and the hallway extends around this to the new flight of stairs further back. The Dennison Manufacturing Co. meanwhile has been doing business under the disadvantages of a mechanics' siege, but before the end of the present month their salesroom will be in first-class shape and their stock will again be arranged in its usual compact and systematic manner.

—A. Luthy & Co., have enlarged their office, adding a private room for the special transacting of the loose diamond business. They have now one of the best arranged offices in the business. This firm though young, is enterprising, hence popular with the trade.

C. G. Bloomer & Son, of Pawtuxet, R. I., were burnt out on March 13th. Their factory was entirely destroyed, entailing a loss of about \$40,000, with an insurance to cover about half that amount. Shortly after the fire, prominent citizens of Pawtuxet circulated a petition for signatures asking C. G. Bloomer & Son, to resume business in their town and making liberal offers.

—At a meeting of the National Association of Jobbers in American Watches, held at the rooms of the New York Jewelers' Board of Trade, No. 41 Maiden Lane, on Tuesday, March 6, the following gentlemen were elected as members of the Executive Committee for the ensuing year: Messrs. S. F. Myers, F. R. Simmons, L. Stern, N. H. White, S. Oppenheimer, D. Marx and L. Herzog.

—The production of coal in the United States, during the year 1887, amounted to about 110,000,000 tons, of which 36,626,627 tons were anthracite and 74,000,000 bituminous; 8,000,000 tons were converted into coke. In 1886, the output was about 100,000,000 tons. Of the principal metals produced: lead, 160,000 tons; copper, 81,473 tons; zinc, 51,000 tons; gold, \$32,500,067, largest year since 1880; silver, \$50,833,844.

—The firm of P. L. Miles & Co., Cleveland, O., has been dissolved, and Mr. P. L. Miles succeeds to the business. It is understood that Messrs. Uhl, formerly of Miles & Co., will start in business very soon. Since the dissolution of the firm, both Mr. Miles and the Uhl Brothers endeavored to secure the exclusive control of the business, as the Euclid avenue store was in a fine location and had a good reputation; and it was some time before a compromise was effected.

—In speaking of a recent defalcation at the Troy Post Office, a gentleman said: "It is never safe to enclose an old bill in an envelope to be sent by mail. Why," said he, "men who are experts can tell whether a letter contains money or not simply by the sense of smell. If you will notice an old greenback, it has a peculiar smell about it that can readily be perceived, even if it be enclosed within a letter. It is better to send a registered letter or a postal note, or, if you enclose a bill, be sure it is a new one. That will not smell."

—Aikin, Lambert & Co. are in receipt of a communication from a customer in West Africa, stating that he has been successful with their goods, and that their gold pens, gold pencils and holders especially have taken the fancy of the people there. He thinks he can extend his sales considerably if they will send him an illustrated catalogue, which, of course, was done. The Universal Yankee is bound to make himself known throughout the world, and it makes little difference to him whether his customers are civilized or savage so they buy his goods. The export trade to Africa is yet in its infancy.

—There is a clock at present on exhibition at the State Mining Bureau which is very curious in construction, and, though over two hundred years old, keeps excellent time. It is enclosed in a long glass case on a three-foot stand. The clock is but 12 inches long and about 8 inches wide. It is made of Japanese brass and has two side doors, which are kept open in order to allow visitors to see its unique construction. Instead of the hands moving they remain at a standstill while the dial continually goes round, and every minute a small weight moves up a peg. The face is covered with Japanese characters. The clock is wound up daily by pulling two small weights, which are attached to a cord and move a larger and heavier weight so as to touch the works. This clock has a history. It was the property of the Mikado's household for over one hundred and fifty years. An English trader got possession of it and brought it to this city, where it has been in the possession of various parties at different times.

—Mr. Chas. F. Irons, of Providence, R. I., has purchased the stock of emblems manufactured by Hudson & Farnum, together with the tools used in their manufacture. T. C. Hudson & Co., will continue the manufacture of their patent bracelet, lacepins, etc.

—Just as the last forms of THE CIRCULAR go to press, we receive notice of the sudden death of Mr. F. Quinche, one of the oldest importers of Swiss watches in the trade. He left his office, 17 Maiden Lane, on the evening of March 26th, in usual health, and his employees were shocked the next morning to hear of his death, which occurred suddenly in the night, at his residence in Brooklyn.

—The "Acme" Lever Button, made by F. I. Marcy & Co., will appear in several new styles of spring dress. This popular brand of lever buttons is in as great demand now as ever, and with the improvement of the short post, long when open and short when closed, it holds its place in the market of lever buttons. The new styles are very neat and should be seen.

—Heeren Bros. & Co., of Pittsburgh, Pa., have issued a circular to their patrons, saying that their new stock of clocks, bronzes, optical goods, flatware, tools and materials has arrived, and is ready for inspection in their elegant showrooms at 525 Wood street. Their silverware stock has already been bought, and is waiting only for the erection of temporary shelves to receive it. They emphasize especially that all their stock is new and well selected, and that the assortment is more complete than ever before.

—Argand, a poor Swiss, invented a lamp with a wick fitted into a hollow cylinder, up which a current of air was permitted to pass, thus giving a supply oxygen to the interior as well as the exterior of the circular frame. At first Argand used the lamp without a glass chimney. One day he was busy in his work room and sitting before the burning lamp. His little brother was amusing himself by placing a bottomless oil flask over different articles. Suddenly he placed it upon the flame of the lamp, which instantly shot up the long, circular neck of the flask with increased brilliancy. It did more, for it flashed into Argand's mind the idea of the lamp chimney, by which his invention was perfected.

—The Middletown Plate Co. is bringing out this season a most unique line of new patterns in silver plated ware, which it is expected will far surpass in popularity any of their novelties of past seasons. In tea sets, *tete-à-tete* sets, fruit and cake baskets, etc., they have some especially handsome designs. Many of the new designs are in glass, richly colored and elegantly mounted in appropriate patterns. The New York and Chicago branches of this company are kept supplied with a full assortment of the company's goods, and the new patterns are put upon exhibition at these places as early as possible after being produced at the factory. Besides the two places mentioned, the company has an agency at San Francisco, Cal.

—Lucky among the drummers were those commercial traveling gentlemen who happened to be in the neighborhood of New York, during the recent blizzard. Most of the gentlemen of this description at that time were far away from the blizzard-infected country and were disgusted at their luck when they heard of it. But what a great treat it was for those who were in it! They will have a great number of marvellous tales to tell of their exciting adventures in the storm, how they were snowed in on board a train, at a hotel, or in a ferry-house. Or how they waded through drifts of snow so many feet high and so many miles long. These stories will be full of wonderful incidents and will serve for the amusement, instruction or pleasure of fellow-drummers, customers and hotel clerks. But as for those poor salesmen who were far away from the blizzard district, why, even the office boys at home can tell of more wonderful experiences than theirs. It was a terrible time in Maiden Lane. On Monday, the 12th of March, but few offices were open. The following day a few clerks were seen early in the day lounging about. There were no mails except local and foreign, and it was not until Wednesday or Thursday, that business was resumed as before the storm.

Mr. S. E. Theus, of Savannah, Georgia, who was for many years a traveler in the trade, and known to every dealer throughout the South, has recently been the subject of a most difficult but highly successful surgical operation. At the battle of Gettysburg he played "short stop" to a Federal bullet, and has been lame ever since. The operation referred to promises to restore him entire use of his limbs. Although at present on crutches, he hopes to dispense with them speedily.

—A prominent watchmaker in Rio Janeiro has a solar clock fitted up in his establishment which is not only ingenious, but practically solves the question of perpetual motion for those places where the sun shines perpetually. He has an electric bell apparatus in the upper story, and the two wires from the battery are furnished each with a thin, flat horizontal piece of metal, separated by a distance of four to five millimeters one from the other. Just above the flat pieces of metal a bi-convex lens concentrates the rays of the sun upon them at a certain moment, noon, for instance. The action of the sun's rays heats and bends the metal pieces so that they come in contact, thus closing the electric circuit, which rings the bell. This is not all Mr. Magnin requires of the sun; he forces it to wind up the clock in his own room at the same time. The barrel arbor carries a click and a ratchet, which is wound up by the hammer of the electric bell as it moves forward and backward, striking the hour. And even this is not all—this sun has to regulate the clock also. The canon carries a washer with an indentation corresponding to a jointed lever, which is set in motion by the armature of a magnet, and at noon turns the canon so as to bring the minute hand upon the figure twelve.

—The officers of the Jewelers' Security Alliance very justly boast of the great success that has attended their efforts in prosecuting burglars. The three men who robbed the store of Mr. G. W. Fairchild, Bridgeport, Conn., last July, received their sentences of imprisonment on the 8th of March. John McManus was sentenced to four years in state prison. George Feyth and Joe Dollard received sentences of two and three years respectively, and now the members of the Alliance are congratulating themselves over their successful encounter with this gang of burglars. This case was a particularly difficult one. The thieves left but a very meagre clue in the form of a piece of black silesia which they had used as a screen in their operations. After they were discovered they engaged skilful counsel, and with the aid of political and wealthy friends tried to evade the penalty of their crime. But the counsel of the Alliance fought every legal and technical point raised by the other side, and in most of them successfully gained their ground. The speedy end of the trial has pleased all the members of the Alliance, and to that organization the entire trade is indebted for their excellent work in thus speedily bringing to justice, some criminals, who if it were not for their rigid prosecution, might have gone on in their crime, and the jewelry trade been the loser. It is hard to see how any wise jeweler can keep out of the Alliance, for the cost of membership is small, while the protection afforded is great. No individual jeweler could have captured this trio of noted burglars, but the Alliance found it comparatively easy.

OUR WORKING DESIGNS.

Our artist again exhibits some strikingly novel designs in jewelry, out of which the practical jeweler can abstract some useful ideas. Number 1 is a design for an ear ornament set with precious stones. Number 2 is a design for lace-holders, which are connected to the ladies' collar button by means of a chain. Number 3 is an odd design for a locket with several sliding frames for pictures. Number 7 is a design for shawl or lace pins connected by a chain. Number 9 is a link-button for the cuff, with a hinged end, after the plan of lever buttons. Number 10 is a design in a hair ornament, the utility of which is apparent at a glance.



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AND

HOROLOGICAL REVIEW.

OFFICIAL REPRESENTATIVE OF THE JEWELERS' LEAGUE, THE NEW YORK JEWELERS' BOARD OF TRADE, AND THE JEWELERS' SECURITY ALLIANCE.

It is also the Recognized Exponent of Trade Interests.

A MONTHLY JOURNAL DEVOTED TO THE INTERESTS OF WATCHMAKERS JEWELERS, SILVERSMITHS, ELECTRO-PLATE MANUFACTURERS, AND THOSE ENGAGED IN THE KINDRED BRANCHES OF ART INDUSTRY.

SUBSCRIPTION.—To all parts of the United States and Canada, \$2.00 per Annum, Postage Paid. To all Foreign Countries, \$3.00 per Annum, Prepaid.

All communications should be addressed to

SETH W. HALE, PRES'T,
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189 BROADWAY, NEW YORK.

Advertising rates made known on application.



A full Index to Advertisements and Table of Contents will be found on Page 5 of this issue.

THE GREAT Lick telescope and other apparatus which the generosity of Mr. Lick provided for the University of California, is now all in place in the Observatory specially constructed for it, and is ready to be turned over to the University by the trustees who have had the matter in charge. The amount left by Mr. James Lick as an endowment for the Observatory, was \$700,000, nearly all of which has already been expended, so that the maintenance of the Observatory will entail an expense of about \$50,000 a year, which the University will have to provide. The telescope, it is claimed, is the most powerful one in the world, and astronomers are anticipating great results from the observations to be made with it, and it is therefore regarded as of the highest importance that it should be placed in charge of the most scientific men who can be found. A late report of observation made with it states that two moons of Mars have been noted, which have a diameter of only thirty miles. The spectroscope is also pronounced to be the most extensive one yet made. It will be remembered by our readers that great difficulty was experienced in obtaining the lenses for the telescope, and that after two or three failures abroad, they were finally finished in Boston by Mr. Alvin Clark, a native of this country.

REGARDLESS of the action of the legislature to repeal the Saturday half-holiday law, the practice of closing most places of business on Saturday afternoons during the months of June, July and August, will doubtless prevail this season as it has heretofore. The half-holiday law was found to be a mistake, producing confusion in banking facilities, while it was not desired by either workingmen or their employers. During the cool months, persons who are required to work for a living, desire to employ their time to the best advantage, and to earn as much as possible. It was at the desire of the workingmen that the half-holiday was done away with at the close of the hot weather. It is an absurdity to keep the law on the statute books, when those in whose interests it was ostensibly enacted do not want it, and its remaining there only tends to hamper and embarrass business transactions. During the three hot months, the half-holiday comes as a relief to employers and employed equally, and imposes no hardship upon anyone.

THE BILL now before Congress providing for the issuing of fractional currency for use in transmitting small sums or fractional portions of a dollar through the mails, is one that ought to pass. Much inconvenience is now felt on account of there being no such paper currency, and many industries lose considerable every year because of the inconvenience they experience in the matter of fractional currency. Probably the jewelers suffer less than almost any other class of merchants, but even they will concede that small currency notes would be a convenience. Petitions from business men in all sections of the country have been forwarded to Congress asking for the passage of the bill. When the old fractional currency was in use it became a great nuisance for the reason that there was a scarcity of small bills, and some persons seem to delight in paying their indebtedness entirely in the dirtiest specimens of currency they could find. A limited amount of fractional paper currency that should be a legal tender in small sums only, would be a convenience.

IT IS a singular thing that bars of gold can be permitted to kick around the streets of New York promiscuously. Our streets are not yet paved with gold, although the paving of some of them has cost as much as though the stones were gold bricks. During the past month, a drayman who was charged with taking five gold bars from an office to a factory for manufacturing purposes, lost them from his cart in the street. They were wrapped in canvas sacks, and were picked up by some Italian street cleaners, who chucked them on the load of street dirt and they were carried away to the dump. Here they were thrown about for a day or two, when a driver took them home with an idea that they would be useful around the stable. Here they were opened, when the stamp of the assay office appeared, and raised the suspicion that the bars might

be valuable. Inquiry at the assay office developed the value of the bars, and also the name of the owner, and they were subsequently returned to their proper destination. The value of the bars was about \$5,000, and it is the most singular thing that they were recovered after so many adventures.

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WE ADD to our list of correspondents this month a gentleman associated with jewelry interests in Paris. His first contribution will be found in other columns, and cannot fail to be read with interest. An interesting letter will also be found from our special correspondent in the diamond fields of South Africa. Our correspondents now represent every important center of the jewelry trade in the world, and their letters contain something of interest and value to every reader. They are written by gentlemen in some way identified with the trade, and who know what its members like to read about. Our technical articles will be found as voluminous and valuable as usual, while "Elsie Bee" discourses in her usual pleasant manner on the novelties that are to be found at this season in the establishments of the dealers. THE CIRCULAR gives in each number more news regarding the jewelry trade, and more valuable technical information than can be found in any other publication, or in all the other trade papers combined.

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A TRAVELER related to us the other day a very good story on himself. It was in his early traveling days; in fact, he had been taken out of the office to make his first trip on the route of the regular traveler who was sick. He visited two or three cities on his route, not meeting with much success, which he attributed to the fact that two or three other salesmen carrying the same lines were just ahead of him. Being afraid the house would be dissatisfied, and a little doubtful of his own abilities, he telegraphed his employer, "Better call me in, there are three rival salesmen ahead of me." Instead of calling him in, the head of the house telegraphed: "Push ahead; there are a hundred other fellows behind you!" So he went ahead, satisfied that he could at least hold his own with the fellows that were behind, with the result that he made such a good trip that he was kept on the road, and his salary increased. He said that idea that there were a lot of fellows following, served to stimulate him, and he determined to go ahead and push things for all there was in him.

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THE MONTH of April was the dullest of the year thus far in the jewelry trade, but not discouragingly so by any means. It is naturally to be expected that April will be dull, for the season is a discouraging one, being neither Winter nor Summer, and usually an unsatisfactory specimen of Spring. This was especially true of the month just passed, at least in this vicinity. Rain and disagreeable winds prevailed, accompanied by chilly blasts that made heavy overcoats a necessity. The breaking up of winter always brings about an unsettled feeling, as it is apt to be accompanied by serious disasters of one kind or another, the result of floods and storms. There were less of these this year than usual, although some damage was done in a few localities by the breaking of dams when the ice went out and the overflowing of streams by the melting of the snow. But there was no great disaster that called for national assistance for its victims, as has been so frequently the case. At the present writing, advices from the country in general represent the farmers as being hard at work putting in their crops, with every prospect favorable to them. While alarming reports were set afloat during the winter, as usual, relative to the destruction of cattle, of fruit, and other lament-

able events, the summing up of all the devastation wrought by the storms and colds of winter indicates that there was less than usual, so that the people in general have cause for congratulation that they escaped with so little loss. While the great blizzard that visited the seaboard was something to talk about, it really did little permanent damage, and the effects are already forgotten to a great extent. So far as can be judged at present, the season promises to be a fair, average one for trade in general. The coming presidential election, with its stump speeches, torchlight processions, and general excitement, may play some little mischief with trade and commerce, but this is discounted by the fact that it is anticipated, and provided for. It is the unexpected that plays havoc with trade and commerce. A number of dealers in the city informs us that, notwithstanding a dull April, their record of sales so far this year is considerably in advance of those for the corresponding four months of last year. May the record go on unbroken till the end of the year.

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WHEN a man overworks, he is apt to be troubled with sleeplessness, and this complaint is becoming one of the most common that is heard. Loss of sleep upsets a man for business very quickly, and he is very apt to resort to some narcotic to put him to sleep artificially. A great many quack nostrums are advertised for this purpose, but it is safe to say that the remedies are worse than the disease. It is a dangerous thing for a person to take anything whatever to produce sleep, for it is dangerously liable to form a habit with him that makes him dependent upon drugs, eventually resulting disastrously. A good remedy for sleeplessness is a shower or sponge bath in cold water before going to bed; this may be supplemented by binding a towel, saturated in cold water on the back of the neck. Sleeplessness is generally the result of too much heated blood in the brain, and anything that tends to cool the blood, or to drive it to other parts, brings the needed relief which renders natural sleep possible. The writer has tried the wet towel hundreds of times, with entire success. A quack nostrum that has been much advertised lately as a remedy for sleeplessness under the title of Essence of Scotch Oats, has recently been analyzed by health officers, and found to be one of the most deceptive and deleterious compounds that could well be devised. It contains a large amount of alcohol and a full dose of opium. It certainly ought to produce sleep, but it is also likely to fix upon one the deadly opium habit, which makes a slave of its victim, and finally destroys his life. We join with the health officers and the press of the country in warning our readers against this deceptive and deadly quack medicine. We know the temptation to take anything to produce sleep, but sleep produced by any artificial means does not supply the place of natural slumber.

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THE PRESENT craze for canes and umbrellas with massive gold, silver or silver plated handles, which combine usefulness with artistic ornamentation, has virtually built up a new industry, for the manufacture of these handles gives employment to a large number of men, and also disposes of a large quantity of the precious metals. Some of the daily papers have recently been seeking to discredit the quality of metal used in these elaborate cane and umbrella heads, by declaring that the majority of those that are marked "sterling" are made of white metal and plated. This is a mistake, for the manufacturers cannot afford, even if they were so disposed, to perpetrate a petty swindle of this character; they have reputations at stake, and when they put their stamp upon an article it means just what it says. The rage for massive handles made of metal is such that price is little object to many purchasers, especially when the cane or umbrella is designed for a present. Oxidized silver is a favorite handle, and these are made with a degree of elaborateness and fine

workmanship that, together with the value of the metal used, make the head a costly and valuable article. Of course, there are deceptions in goods of this kind as there are in every other, but if buyers patronize responsible houses there is little danger of their being swindled. If, however, they persist in going to junk shops to buy goods made of precious metals, they are quite apt to obtain fraudulent articles. A good stock of canes and umbrellas makes an excellent showing in a jewelry establishment, and retail dealers generally would find them a source of profit.

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COLLECTIONS are reported as having been quite slow during the past month, payments coming in even more slowly than goods went out. This makes it hard upon the manufacturers and jobbers, who have to carry an extremely heavy load at best. Their hope of profit lies largely in being able to convert their goods into cash quickly, and when payments are delayed, it means that they must either curtail their production or hunt up more capital to put into the business. Dealers, of course, know all the advantages they derive from the credits extended to them by the manufacturers and jobbers, for there are hundreds of men in the jewelry business to-day who would be working for weekly wages, were it not for the fact that they have been fitted out with a stock of goods on credit, for nearly all of which they still owe. Knowing the facts in the matter, it would seem natural for them to make unusual exertions to meet their payments promptly, and so contribute their share to making the business run smoothly in all its channels. Too many, however, are inclined to look upon the credit extended to them as their right, and to ignore the fact that there is any courtesy in it, or that they are under any obligations to those who have set them up in business, and upon whose capital they are operating. They expect their creditors to carry them as long as they wish to be carried, and only pay their bills when it suits their convenience. There ought to be a little more reciprocity in the jewelry business, and not have the obligation all on one side. Dealers can do much if they choose towards improving the condition of the business, and in no way can they do more than by paying their bills promptly.

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THERE is apparently no limit to the ingenious devices produced in the way of mechanical clocks. We have had on exhibition recently revolving light houses, mills with water wheels turning, steamships, etc., but the latest is a railroad locomotive, with all its wheels in motion, pistons working, and, in fact, all the working parts moving as in a regular locomotive at work. It attracts marked attention, as few persons can pass it without stopping to study the mechanism. The perfection attained in modern clock making is something wonderful, while the prices have been brought down to a point where he must be a poor man indeed who cannot afford to have one or more clocks in his house. But there is a sort of mania among wealthy owners of fine houses to have a great variety of peculiar clocks. The writer of this recently called at the house of a gentleman who owns an elegant country residence, and was somewhat surprised to hear the hours struck by nine different clocks, each having a tone peculiar to itself. As they were set to strike at short intervals between each other, the effect was peculiar. Of course, there were no harsh or discordant tones, but the bells were soft and sweet to the ear. Among these clocks were several mechanical ones, which sent out birds and human figures to perform various feats at regular intervals. It has long been believed that the clepsydra, or water clock, found in Greece about 480 B. C., was the earliest form

of mechanism for marking the flight of time. Professor Seely, however, describes a device used by the Malays on board of their light sailing craft which, if not so old as the water clock, is quite suggestive. The device consists of a cocoanut shell placed in a bucket of water. A small orifice is pierced in the shell, through which the water enters at a graduated rate that serves to fill and sink the shell in just one hour. The man on watch then knows it is time to call his relief. In northern India the same plan is used, only a copper bowl is substituted for the cocoanut shell, and when it is filled the man on watch also uses the bowl for a gong, thereby announcing the passing of the hour. From the earliest time, or when intelligence was developed in man, the necessity of having some means of marking the flight of the hours was felt, and every people, however savage and uncivilized, have been found to have some method of dividing the day and marking the intervals as they passed. The present generation of men, however, enjoy the privilege of innumerable devices for accomplishing this object, all of which are purely scientific in their arrangement and construction.

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THE LABOR disturbances in the West, that originated with the strike of engineers on the Burlington and Quincey railroad, have not yet ceased. A strike in sympathy with the "Q" engineers took place on the St. Paul Road, but it was of short duration. The obstruction to general business was so great that the public expressed itself very strongly against the strikers, the business exchanges in Chicago even taking definite action in opposition to them, that the leaders were only too glad to call the strike off. So far as the Burlington strike is concerned, that was settled in a very few days by the railroad securing new men to take the place of the strikers. The engineers who went out, however, persist in thinking that there is a prospect of there being reinstated if they can only sufficiently annoy and embarrass the road, and they have accordingly induced the switchmen to strike, but they remained out only a few hours, being only too glad to return when they saw the numbers of men who were anxious to take their places, and when they were acquainted with the sentiment of the people regarding their embarrassment of railroad traffic. The attempt of the Brotherhood of Engineers to boycott every railroad that handled freight delivered to it by the Burlington road, also failed disastrously from the same cause. Had this been persisted in, many of the leaders would have found themselves arrested on charges of conspiracy, and the courts had already indicated that they proposed to punish severely anyone found guilty of this offence. A statistician who has carefully studied the results of the Burlington strike, estimates that it has cost the strikers not less than \$1,000,000 and the railroad probably three times as much. This is a pretty big sum for workmen to lose in a fruitless attempt to coerce a corporation that has demonstrated that it is entirely independent of them. There exists still much dissatisfaction among the railroad employees in the West because of this failure of the Burlington strike, and they threaten to further embarrass the road as opportunity presents. It is hard for them to concede that they have been beaten at every point, or to admit the fact that public sentiment is against them. When the train hands on the St. Paul road went out, the president of the road issued an order setting forth that if he could not run trains he would have no employment for several thousand men employed in other capacities, and that they were to be discharged on a specified day. The strikers, however, concluded it the part of wisdom to go back to work rather than see such a lock out of their fellow-workmen. The tables were thus effectually turned against them, and they would have been obliged to account to their brother workmen for being the cause of depriving them of their situations. Lock outs have been found to be an efficacious remedy for unjust strikes, as was exemplified in the case of the silversmiths, who were the first, we believe, to

lock out their men when a strike occurred in one factory that threatened to involve all if it was not nipped in the bud. The discharge of the workmen in the other shops soon put an end to a strike that was intended to extend to each in turn. The Knights of Labor were, of course, prominent in the recent labor troubles, and, as usual, they have simply brought trouble and loss upon the workingman. This has been the history of every strike in which the Knights have taken a prominent part. How much longer will it take to teach the American workingmen that they are being used as the weak tools of a few mischievous demagogues who profit by these troubles which they originate and out of which they make money. The lessons have already been costly ones, and they should be appreciated by this time.

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A CHEAP traveling man is about the most extravagant luxury a respectable business house can indulge in. A traveling salesman, to be successful, must make a favorable impression on his first appearance, or his expected customer will promptly turn his back on him. A man cannot dress well and wear the air of an active, energetic business man, unless he is in receipt of a fair living salary, and is allowed enough for his expenses to enable him to put up at respectable houses and to travel in a manner becoming a gentleman. It is only the third rate salesman who will consent to travel otherwise, and it is not to be expected that they will be able to give as satisfactory accounts of their trips as would men who are first-class in every respect. Dealers measure their men as readily as they themselves are measured by others, and they know what style of man they can afford to be short and churlish with. A shabbily dressed salesman, whose general appearance bespeaks niggardliness on the part of his employers, whose breath is redolent of the cabbage and onions of cheap restaurants and mechanics' hotels, creates an unfavorable if not offensive impression at once, and he is fortunate if he is not shown the door before he has an opportunity to even show his samples. It is this cheap class of travelers who have brought the name of commercial traveler somewhat into disrepute, and made them a subject of much cheap wit among the newspaper paragraphists of the country. Another style of salesmen that are no credit to their employers, are the young men, very fresh, who assume the airs of "dudes," delighting to get up flirtations by the way, boasting of their evil ways in New York, drinking, smoking, and talking slang and profanity incessantly in loud tones of voice. These are offensive in all places, and when they couple their employers' names with their own, they discredit the house they so poorly represent. Such salesmen are seldom found representing the same house two years in succession, as their lack of success will not warrant their re-employment. A good traveling salesman is worthy a liberal compensation for his work and for the disadvantages under which he does it. It is no pleasant task to be on the road week in and week out, seldom knowing what it is to have a full night's sleep, separated from home and friends, stopping at all sorts of places for meals, at the risk of permanent dyspepsia, and dealing with all sorts of customers. The only way to derive the full benefit of the services of a competent man on the road is to pay him liberally, and allow him such sum for expenses as will enable him to live like a gentleman, and to push his work with the utmost rapidity. A traveler has the power to make his trip a costly one to his employers if he is so inclined, by dallying on the way, and fooling away his time. Every respectable house employing traveling salesmen, should be represented by men whom the proprietors would be willing to have represent them at home, and in whose company they are not ashamed to be seen when they are at home. Commercial travelers have become a most important factor in the successful prosecution of business, and the firm that consents to employ second or third rate travelers are pretty sure to find themselves distanced in the race for business.

Gilding and Gold Plating.

Continued from page 42, March, 1888



ALL ARTICLES, while still wet from the cleaning and quickening processes, should be quickly immersed into the depositing vat. The practical minutiae of preparing the surfaces of different metals for receiving adhesive deposits, vary in almost every manufactory, and much information yet remains to be developed upon this point; for want of this knowledge the most skilful operators sometimes fail in producing perfect adhesion, especially upon zinc, cast iron, steel and Britannia metal.

Wiring Articles.—The articles have wires of copper attached to them, to suspend them by when in the vat. The wires differ in size; with small objects, such as spoons, knives, forks, teapots, jugs, etc., size No. 20 to 22 of the Birmingham wire gauge, and about 18 or 20 inches long, are used; very large ones, such as fire-irons, fenders, hat-stands and pieces of ornamental iron work, are suspended by strong copper or brass hooks. In some cases, where a powerful and certain connection is required, the wires are soldered to the articles.

Voltaic Batteries.—There are but few kinds of voltaic batteries usually employed in electro-metallurgy, and those which are used are not often employed for operations of the greatest magnitude; in such cases magneto-electric machines are rapidly superseding voltaic batteries, because they furnish electricity at much less expense and their action is more uniform. I shall therefore only briefly describe such as have been commonly employed.

Those most used in electro-deposition are the old Wollaston battery of zinc and copper plates in dilute sulphuric acid, Smee's, Daniell's, Bunsen's and Grove's.

Wollaston's Battery.—The one which has been most employed for electro-deposition upon the large scale. It consists of a large stoneware jar, nearly filled with a mixture of about ten parts of water and one of oil of vitriol. Across the top of the jar is a movable bar of well-varnished wood, with a longitudinal and vertical groove in it, within which a thick plate of zinc may be raised and lowered by means of a weight with a cord passing over a pulley; the great use of this is to regulate the quantity of the current. To the edges or sides of the bar are fixed two sheets of copper, connected together by a copper band at their corners, and so attached that they may be occasionally removed and cleansed; they extend nearly to the bottom of the liquid. Vertical rods of varnished wood are fixed upon the under surface of the cross bar, to prevent the zinc touching the coping. The copper plates should not be allowed to remain many hours in the liquid when the battery is not in action, because they then corrode and form a small amount of cupric sulphate, which dissolves in the liquid, and this acts upon the zinc plates and causes them to waste rapidly, because the zinc precipitates the copper upon itself and thus a local battery is formed. If the copper plates remain long in the air, in a wet, acid state, they become covered with a badly-conducting blackish film of oxide, and should be scrubbed with sand and a hard brush and washed before being again used.

Smee's Battery.—This one has been extensively used for small operations and is very convenient. It consists of zinc and platinized silver, immersed in dilute sulphuric acid. Two plates of zinc are held together (with a bar of varnished wood between them), by means of a clamp binding screw, and the sheet of platinized silver is fixed in a groove in the under side of the wooden bar, and attached to a pillar binding screw. The silver and zinc are prevented from mutual contact by means of pieces of cork placed between them at their lower ends. It is important in this battery (and to a less extent in that of Wollaston) that the sulphuric acid employed should be free from nitric acid; also that the negative plate should not come in contact with mercury. Platinized silver (that is, silver coated with black platinum in a state of very fine division) is much more

effective than silver alone, because with the latter metal the bubbles of hydrogen evolved adhere to its surface and diminish the action, whilst with platinized silver they escape rapidly to the surface of the liquid. Platinized silver is also more electro-negative than silver alone, and still more so than copper, and therefore produces a stronger current.

Daniell's Battery.—This one has also been largely used in electro-deposition, but its use for that purpose has diminished. It consists essentially of amalgamated zinc in dilute sulphuric acid, and copper in a newly saturated solution of cupric sulphate, the two liquids being prevented from mixing (but allowed to touch each other) by means of a porous partition. One of its forms is a copper vessel forming the negative metal, and containing the cupric solution and a bar of cast zinc, supported in the acid and water within the porous cell by the wooden lid of that vessel. The copper cell has a large lip, which is kept full of crystals of blue vitriol, to supply the loss of copper deposited upon the vessel; it may also be used for the purpose of pouring out the solution.

The great advantage of this battery is the uniformity of its action, and it is therefore called the "constant" battery. It is sometimes constructed with the acid and water outside and the copper plate and solution inside; in that case a cylinder of rolled plate zinc is employed; it is also occasionally made of a rectangular form with the porous cell of a flat shape.

Bunsen's Battery.—This kind is often used for gilding, two or three large cells being commonly used. It consists of amalgamated plate zinc in dilute sulphuric acid, and gas-carbon, or Bunsen's coke, in strong nitric acid, the latter liquid being in a porous cell. The gas-carbon is usually in the form of thick rectangular bars, and in such cases the nitric acid is in a cylindrical porous cell; but sometimes it is in the form of plates, and flat porous cells are then necessary. As the carbon is a porous substance the acid rises in it by capillary action and corrodes the metallic connections; the most effectual way of obviating this is by using very long pieces of the substance, a considerable portion of each piece being out of the liquid, and putting a coating of varnish or paraffin upon them a little way down. Sometimes, in order to form a more secure connection, the upper end of the bar is coated with copper by electro-deposition, or else it is encased with metal by dipping it into melted lead.

Grove's Battery is precisely similar to Bunsen's in its essential parts, except that it has platinum instead of carbon. The nitric acid and sheet of platinum are contained in narrow, flat porous cells. It is one of the strongest of batteries, but emits noxious acid fumes after having been in action some time, and its power soon declines.

Relative Strength of Batteries.—The electro motive force, or power of overcoming resistance, varies in different batteries, and is, according to Latimer Clarke, as follows:

Grove's.....	100
Bunsen's.....	98
Daniell's.....	56
Smee's (when not in action).....	57
Smee's (when in action) about.....	25
Wollaston's (copper and zinc in dilute acid).....	46

From this table it will be observed that the strength of a Smee's cell decreases during its working; this occurs very quickly after the current commences, because the internal resistance is increased by hydrogen gas adhering to the negative plate; after that has occurred the current remains tolerably constant; a similar phenomenon happens with the Wollaston's element, but not with the Daniell's, because in the latter the negative surface is kept free from that gas.

Relative Advantages of Different Batteries.—Wollaston's is the most suitable in cases where the resistance is not great, and where a large quantity of electricity and long-continued action (as in depositing copper and silver) are required, because its electro-motive force is small; its action (after once it has commenced) is tolerably uniform, and large plates and considerable bulks of exciting liquid may

be conveniently employed. Smee's is suitable for similar cases, but where only a small quantity of electricity is required, because large plates of platinized silver are expensive. Daniell's is the best in cases where the resistance is greater and a very uniform current is necessary. Grove's and Bunsen's are the most suitable where the resistance is still greater, and an occasional current of considerable electro-motive force, but not of long continuance, is necessary, as in gilding and preparing for gilding (that is, brassing or coppering) small articles of iron, steel, etc., in cyanide solutions.

(To be Continued.)

The Credit System.



EARLY ALL the abuses that are complained of in commercial circles result from the credit system. Probably it will be impossible to ever place all business transactions on a cash basis, yet the man who buys and sells for cash is the only perfectly independent one, who can truly say that he is exclusive master of his own affairs. The secret of the great success of the immense bazaars, of which so much complaint is made, is that their managers pay cash for all they buy, and, consequently, get every advantage in price that manufacturers can afford to allow, whereby they are enabled to sell their goods at lower prices than are those who buy on credit and have to pay for the privilege of doing so. Not only is

the man who buys on time usually charged more than the cash purchaser, but he must pay interest in addition, thus paying two additional prices. In the present struggle of industrial competition, the customer who will pay cash is eagerly sought after, and if he has been wise enough to thoroughly inform himself as to goods and prices he can make terms most favorable to himself, besides securing the advantages of cash discounts. This matter of discounts is often thought to be of little consequence, especially by the small dealer, who, feeling himself obliged to give credit, feels that the small sum he would realize in discounts by paying cash does not equal the accommodation resulting from a long credit. If, however, the advantages to be derived from cash transactions were shared by the retailer with his customer, the chances are that cash transactions would become more generally the rule. But a large number of persons, who derive no particular benefit from paying cash for their purchases, fall into the habit of running up accounts and getting credit for everything they buy. Every dealer would find it greatly to his advantage if he would offer his customers special inducements to pay cash for every article purchased, thus enabling him to do the same thing, and to reap all the advantages to be derived from cash discounts. Let any dealer run over his stock and figure up how much more it is costing him on the credit system than it would if he paid cash, and he will be astonished to see how much he is paying out every year needlessly. It has been most effectually demonstrated that those firms that advertise liberally that they operate on a cash basis exclusively, are not wanting for customers, but find them among the more thrifty portions of the community, for it is the public appreciation that a cash basis is the only correct one for doing business that wins for those firms public confidence. Buyers can readily appreciate the fact that the man who pays cash for his goods

can sell for cash at lower prices than the man who buys and sells on credit, and does not have the advantages of the market that the other one does. The great bazaar managers realize these advantages, as does the great army of buyers that swarms in upon them every day. No one ever thinks of asking credit in these places, for they prefer to enjoy the low prices that cash transactions bring them.

During the past few years there has been a decline in prices, accompanied by, or the result of, ruinous competition, which has resulted in sending many of the weaker dealers to the wall, increasing the necessity for economical management and the frequent turning of capital to realize the compensating advantages resulting from low profits. Many dealers fail to appreciate the advantages of having cash in hand until they are confronted with an overdue account, and are forced to make sacrifices in order to meet it. Then the man who will advance them ready money, even at a heavy shave, is regarded as a benefactor. The rapacity of note shavers has become proverbial, but the sole advantage they have over others is that they contrive to have a supply of cash on hand, and are in a position to take advantage of the misfortunes or the requirements of their neighbors. If every man was in a position to shave his own notes, his success in business would not be a matter of doubt.

The credit system, that has become so interwoven in the fabric of our trade and commerce, is as much a matter of habit as anything else. Undoubtedly credit is necessary for beginners in business, but it should be their aim to get out of debt as soon as possible. Instead of this, their ambition usually is towards a greater show, more spread, an extension of credit that they may put on an appearance of prosperity that is entirely superficial. The result is exhibited in the fact as shown by statisticians, that ninety out of every hundred men who engage in business for themselves fail disastrously. They push their credit to the breaking point, and when the end comes they and their creditors are enveloped in a common ruin. It is not likely that radical changes can be wrought in our commercial practices suddenly, nor would it be safe to have them, but it stands every merchant in hand to use every legitimate effort to hasten the reformation we have referred to in order that he may live to see and enjoy the coming millenium.

PARIS GOSSIP.

[From our Special Correspondent.]

PARIS, April 16, 1888.

The jewelers' trade has for the last few years suffered a great deal in Paris. It has been, no doubt, partly owing to the retiring habits of President Grévy, who never seemed to understand that in a country like ours one of the first duties of a man in his position was to give frequent balls and dinners.

French trade deals chiefly in articles of luxury, and therefore, in France every one has an interest in promoting the display of all the things which are supposed to add to the beauty of women, or, at least, to set it off. Foremost among those who can do a great deal towards it is the first magistrate of the country.

We are happy to see that our new President, Mr. Carnot, seems to have understood it. Not only has he given several balls at which Mme. Carnot and all the ladies of his family wore their most valuable jewels, but he often goes to the opera, and seems anxious to bring thoroughly out our high classes. The merchants, too, follow the impulse, and their balls are more brilliant than ever. That of the

jewelers, which took place at the Grand Hotel on the 3d of March, was particularly remarkable.

It must be acknowledged that if the jewelers' trade has undergone a rather severe crisis, many amongst our most prominent houses almost entirely escaped it. All those who aimed at beauty and grace, all those who tried to improve their skill, and managed, through a careful application of a refined taste, to find new arrangements of stones, were rewarded as they deserved to be. People who can appreciate what is really beautiful are not so rare after all, and when they can afford to get works of art, they naturally apply for it to those who have proved already that they could realize their artistic ideas. There is a fashion for jewels as there is one for bonnets and dresses, but that fashion can always be altered so as to agree with the looks and private taste of the wearer.

What is worn, for the present, at the opera and at the balls, is a crescent fixed in the hair, and on the bodice, slanting from the shoulder to the waist, three rows of diamonds shooting downward, with a very little space between. The top stones are the biggest and the following ones gradually diminish in size.

The bibelot-monomania has been greatly increasing of late in France. All the people who receive will have, among other curiosities, old silver coffee pots, sugar basins, etc., to show to their friends; real old things, mind you, or, at least, believed to be so by those who possess them, and recognized as such by the amiable guests who are asked to look at, or, rather, to admire them. This has given birth to a new branch of business. Rough copies of various French table articles of the last century have been made, especially in Germany. They have been stamped with coarse imitations of old French marks and sent to Paris, where agents received them and found ready buyers for them among the old curiosities dealers. Three of these appeared on the 28th of February before the *Se Chambre Correctionnelle* to answer the accusation of having knowingly sold goods claiming to be what they were not, and bearing forged marks to the effect of alluring the public into buying them as real old silver. Those three unscrupulous dealers have been, in consequence of the evidence being proved against them, found guilty, together with two importers or agents, and fined from 1,000 to 3,000 francs.

The sale of all the furniture, chattels and wearing apparel having belonged to Marie Regnault, Pranzini's victim, began on the 15th of March at the Hotel Drouot, and was attended with the most scandalous excitement, owing, no doubt, to the disreputable talent displayed in exposing the various things, so as to make all traces of the crime almost glaring. Some of the jewels brought a comparatively high price. For instance, one of the bracelets found in the Palais de Longchamps' drains, at Marseilles, offered at 6,000 francs, reached 14,200=. Something surprising is that the much talked about little watch, valued at 500 francs and offered at 200=, did not raise above 220=.

Business is always a little brighter in the Easter-time, which is an occasion for presents of all kinds. Besides, foreigners, and especially English people, are accustomed to come to Paris for the *Gemaine Sainte* (Holy Week). It gives to the French capital a momentary increase of life, by which trade in general is bound to profit. When that temporary animation will have subsided jewelers will receive orders for wedding presents, as most marriages take place after Easter. Many engagement rings have been given already. Let us hope that none of them will be returned to the giver.

On the night of the 16th of March a thief broke into the place of Rollin & Feuardent, antiquarians, 4 Rue de Louvois, Paris, and stole a large amount of rare and ancient medals and old coins. The entire loss, as valued by the owners, reaches 500,000 francs. The weight in gold is 29 kilog., which gives 79,000 francs as the intrinsic loss. The rooms in which those medals were kept are on the first floor looking on the yard, which made it more difficult for the thief to carry out his robbery. They were arranged under a glass case as in a museum. There was no sign of hurry about the accomplishment

of the deed. The thief seems to have taken the medals carefully out of their places, one by one, and, therefore, must have been a very long time about it, considering there were more than a thousand of them. Among the stolen coins were a number of gold pieces to the amount of 1,900 francs, on which stampers had been tried. Some hundred-franc pieces had been marked with the stamp of five-franc silver ones. M. Goron, the detectives' chief, has been unable, hitherto, to trace the thief out.

On Saturday, the 24th of March, took place at the Grand Hotel a banquet offered by the Boards of Trades to the Minister of Commerce and to the managers of next year's Universal Exhibition. 500 people sat down at table. Speeches were made by M. Lourdelet, President of the Commissionnaires' Board, M. Dautrème, Minister of Commerce, M. Georges Berger, the amiable and sympathetic manager of the forthcoming exhibition, and M. Achard, President of the Diamond Dealers' Board. All were hopeful as to the success of next year's great competition meeting in Paris.

Madame Edouard André, better known by the name of Nelly Jacquemart, by which she signed her many beautiful paintings, has just presented all her jewels to the Philanthropical Society, the President of which is the Prince d'Arenberg. That splendid collection is deposited at M. Boucheron's Palais Royal, previous to a public sale. It is thought the whole will fetch about a million francs. This will enable the Philanthropical Society to open new dispensaries and night refuges. In Mme. André's collection the pearls are especially remarkable, although of an ordinary size. The most beautiful pearl necklace in Paris is that of the Countess de Ségur, which is worth two million francs. The next one in value is Mme. Heine's. Then come Mme. Gustave and Mme. Alphonse de Rothschild's, and the retired actress, Leonide Leblanc's. Some others are well worthy of notice. They are the Duchess of Bisaccia's, Mme. Standish's, the Duchess of Mouchy's and the Countess of Pourtalés'. Mme. Boucheron's necklace also deserves a mention, although of one row only. The pearls are not very large, but they are all of the same size exactly and of the same luster. Their weight is fourteen grains. The late Mme. Thiers had a splendid pearl necklace, which came next in value to Mme. Heine's.

The most beautiful rubies known in Paris are Mlle. Edile Riquier's, who has been an actress at the Theatre Français. She has two large rubies set as ear rings. Mme. Crénisse, Hortense Schneider's intimate friend, had a necklace made of rubies, which she sold at the time she got married.

One of the most remarkable collection of sapphires is Leonide Leblanc's.

The most admired diamonds are those of Mesdames Gustave and Alphonse de Rothschild. Mme. Benardaky's and the Duchess de Bisaccia's are also very beautiful. Mlle. Angelo's are, too, of the first water.

Emeralds are not so much sought after. The most prized are those of Mme. Denain, the composer, Leo Delibes', mother-in-law.

Very few actresses can boast of having first-rate jewels. Judic has the best among them, but even hers do not come up to those above mentioned.

The well-known French artist in jewelry, Leonard Morel-Ladeuil, just died at Boulogne-sur-Mer. His most remarkable works are: Night and Dreams, a table (gold medal, London Exhibition, 1862), Milton's Shield (gold medal, Paris, 1867), Helicon's Vase (diploma of honor, Vienna, 1873), The Pilgrim's journey, a large shield in silver and iron, *repoussé* work (1st class gold medal and cross of the Légion d'honneur, 1878). At the next salon will be exhibited three bas-reliefs, which Morel-Ladeuil managed to finish in spite of great pains and sufferings.

Among fashionable jewels, diamond bracelets in links are worn in various ways. Some are placed on the head, in a demi-circle, as a kind of half diadem; some are stretched across the shoulder or on the corsage.

In like manner are worn lovely little daggers. The hilt is of gold

inlaid with small diamonds, the guard of gold *repoussé* in the shape of a shell, and the blade is made of a row of diamonds, gradually diminishing in size down to the point.

Our diamond market has been somewhat influenced by the death of the Emperor William and that of President Carnot's father. Transactions have been dull and profits small.

Free Hand and Mechanical Drawing.

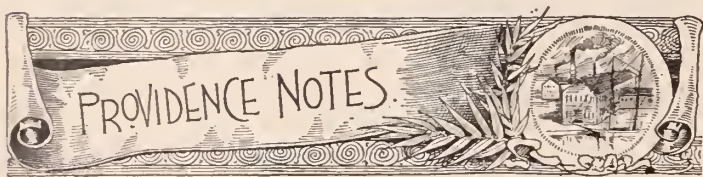
BY EXPERT.



NE OF the greatest attractions of water color drawing is a hazy, softness in the distance and middle distance. To ensure this repeated washes of color are necessary, as stated in a former article. In this way effects are produced that could never be realized by any mixture of color applied at once. The pupil, if he has artistic sense, will soon get on to the method if he experiments judiciously. One of the causes why repeated washes produce softness lies in the fact that all water color paper has a rough-grained surface. Now, for instance, we apply a wash of cobalt blue: the wash as first applied is far too dark; to soften it we take a soft sponge filled with

water and, inclining the drawing board to one side so the washed off color will not drain over the portion of the drawing we wish to preserve perfectly white, go rapidly over the surface. The sponge and water speedily remove a portion of the color mostly from the higher portions of the surface, as we might compare it to laying bare the tops of the little hills of paper. A wash treated in this way loses half, perhaps, of its intensity of color, and is greatly softened in tone. Now, a color washed over this way produces two effects: on top of the little excrescences of paper which the sponge left almost white, the last wash appears in almost pure tint, while in the depressions the effect is as if we held one transparent color over the other. Of course, the eye does not separate the little spots of color, but they combine on the retina, producing the effects of atmosphere such as we realize in sky and distance. There is no place where the effect of such washes is better exemplified than in a sunset sky which appears of a decided apple green. To produce this tint by direct combination of yellow and blue would never produce the softness and effect of atmosphere to be obtained by first washing with lemon yellow and then sponging off, finishing with a wash of cobalt blue, with this last color also washed to a great extent away. The pupil can to advantage use up a good deal of paper washing in sky effects, and only adding a few subsequent contrasts in the way of dark tree tops. It is difficult to make too many studies of sky. We have fewer good painters of sky than any part of landscape. Light patches from washes can be produced by wetting with pure water in a pencil brush, and gradually taking up the color as it is wet and washing it out of the brush in a tumbler of pure water. In this way the edges of clouds can be lightened up, and spots in tree tops to appear as if the sky shone through. Most of our works on water color drawing try and explain too much of the technical working. I think this is a mistake, as we never had an artist of any great skill who did not devise methods peculiar to himself, soon changing the form of his brushes the better to express himself. There is a class of colors peculiarly adapted for sky tints; they are: indigo, cobalt, yellow ochre, lemon yellow, cadmium yellow, light red and rose madder.

In speaking of lemon yellow, I do not mean a chrome yellow of this tint, but a strontium yellow, a very permanent and desirable color. As I started to say above, many books give tints and mixtures, or rather try to, by having them printed to match certain colors or tints washed on bits of drawing paper: to convey the proper idea of color in this manner is quite difficult. Let the pupil mix tints of the colors above named, and he will soon reach a gamut of colors to match almost any conceivable sky tint. For clear sky in midday, cobalt blue with a little rose madder or light red near the horizon. Apply these washes over a pale wash of yellow ochre and study the change. For cloud colors, indigo, light red, and yellow ochre, varying the proportions; adding rose madder if a purple look is desired. A good way for the student is to grind a little cobalt blue in a small saucer, then grind a little light red in another, a little rose madder in another, a little indigo in another: then combine these colors two or three together in different combinations and preparations, making washes on bits of paper until he has a perfect command of his colors. To this add the practice of washing and reducing with a sponge, so as to do all with speed and facility, and he will soon acquire a skill in sky effect that will astonish him if he is a close observer of nature, and can carry impressions of color in his mind. Stippling is a term used in water color painting where the color is applied in dots and small patches to deepen a tint; the brush for this purpose is used with but little color—a sort of half dry condition. This method is used to darken some portions of clouds in sky work, but the touches must be managed so the color does not look spotted. A pencil brush can be used to produce in this way a soft, aerial look, or a hard appearance given, very suitable for expressing the grain or texture of rocks. This is something difficult to explain, even by showing the method of working, but if the reader will examine good specimens of water color drawings he will see that in certain portions of the sky it has been darkened by stippling, he will very soon, after being told of the half dry brush practice, discover the peculiar handling or method of working. All the touches must be so delicate that at the distance from which the picture is to be naturally seen all appearance of brush marks are lost. In working on rocks the edges of the brush marks are sharp and well defined, while in sky work a soft, fleecy touch is required. In painting water the colors used are almost identical with sky colors except you can use raw sienna for producing the green hue, combining it with Prussian blue. As a rule, all reflections in pure water are of the same hue as the object, only darker. In some of our southern rivers, however, reflections are lighter, partaking of the light green tint of the water.



[From our Special Correspondent.]

PROVIDENCE, R. I., April 14, 1888.

We have all heard of that old saying that has been going the rounds for the past dozen or more centuries that "April showers bring May flowers," but, what the manufacturers to-day want to know is, what is it that will bring April orders along? Possibly he remarks to himself "Bother the flowers that bloom in the Spring" He wants orders; yes! Good orders; genuine ones. Those that will give him margin large enough to pay employees a decent salary and leave something besides for himself to live on until trade commences for the Fall season. The blizzard of the middle of March completely paralysed business for about three weeks. For nearly one whole week mail was received at only uncertain intervals, and

when it began to come along regularly the business was so prostrated that the consequence of it was, that there was nothing being done by scarcely any one. Times are just beginning to get adjusted again, and manufacturers who, when business is good, run anywhere from ten to one hundred and fifty hands, have been compelled to discharge most of them, and put the others (just enough to get out what orders that are being received from day to day, which are decidedly small), on short time, some running four days a week and others six; but only eight hours per day. The amount of business transacted so far since first of January, taking all the firms in the business into consideration, it would be safe to say, would not average over thirty-five to forty per cent. of the amount done for the same length of time during the first part of 1887, which is certainly not a very flattering statement to make, but such are the facts. Business has never been so stagnated in the memory of the writer, as at the present. There is absolutely nothing being done in the line of the manufacturing jeweler. The Western and South-Western business has been of the most meagre kind; next to nothing. Firms may have been overstocked from last season's orders, or possibly they are sailing very close to the wind and not carrying any stock on hand, thereby forcing business to be poor, by not ordering goods which they could move reasonably fast, and are going on the conservative tack. Collections, in consequence of poor business, are necessarily slow. The jobbers are paying accounts when they feel that they are forced to, the same being by check. Trade paper during the month was extremely scarce, little being put on the market, but when its appearance was noted, it was generally on short time.

Mr. Dutee Wilcox has returned from his trip of pleasure through the South, and is looking bronzed and healthy. He enjoyed the outing very much, and was sorry that business would not allow of a more prolonged absence, as at the present time there is no place where one can enjoy himself more than some parts of Florida, Georgia and South Carolina.

Mr. William H. Luther, of Luther Brothers, and Mr. B. L. Hall, of B. L. Hall & Co., have been elected members of the Republican City Committee for the coming year.

The will of the late Mr. Fred. W. Allen, formerly of the firm of Royce, Allen & Co., has been filed in the Probate Court.

Col. Isaac L. Goff has been elected Secretary of the Republican State Central Committee for the ensuing year, a post of honor which he is so well adapted to fill.

Mr. Albert H. Pierce, for many years connected with the Gorham Manufacturing Co., died on Monday the 26th ultimo., of heart and kidney disease, at his residence in this city after a short and painful illness.

Mr. Charles Sydney Smith, Senator-elect from this city to the next legislature, was elected on Wednesday last by a majority of 154 votes over all his opponents. The election of Mr. Smith to fill the important position of Senator from the city of Providence, is a sufficient guarantee to his constituents, that their best interests will be subserved by such an able and polished gentleman. Mr. Smith is a manufacturer of solid gold chain at No. 183 Eddy st., and formerly of the firm of Saxton, Smith & Co., whom he succeeded.

Mr. John M. Buffinton, Representative-elect from the 5th ward, received a majority of 239 votes over all other candidates. Mr. Buffinton is a manufacturing jeweler and is junior partner of the firm of Potter & Buffinton, of No. 19 Snow st., and is a member of the Manufacturing Jewelers' Association.

M. Charles Edward Paine and family have arrived at Florence, Italy, from Weisbaden, Germany, where they remained for some weeks, enjoying the *fetes* and balls; they also spent some time at Berne and Geneva, Switzerland, and will remain away for some time to come.

Mr. R. A. Kipling, who sailed on March 24th, from New York for Paris, arrived all safely at Havre, France, on Sunday, April 1st, after a very pleasant trip.

W. H. Robinson & Co., of No. 108 Eddy street, advertised on

March 28th for sealed proposals for a five-story brick block, to be erected on Eddy, Fountain and Worcester sts., at the office of their architects, Stone, Carpenter & Wilson, No. 65 Westminster st. Bids will be received until the 9th of April.

Mr. John Austin, the gold and silver refiner, is about to erect a cottage on Marshall st.

Mr. Oscar Lapham has been appointed executor of the estate of the late Fred. W. Allen, of Roxce, Allen & Co., of this city.

W. S. Hough, Jr. & Co., have located themselves on the lower floor of the "Dyer Street Land Co.'s" building, where they have ample and convenient quarters for the transaction of their business.

Mr. John P. Luther, formerly a manufacturing jeweler and enameler, died on the 28th ult., after a short and painful attack of pneumonia; he entered the jewelry business at an early age, and was at the time of his death fifty-five years of age. Three children mourn his sudden demise.

W. A. Beatty & Co. the past week received the sum of \$10,000, same being the amount of their policy, held in the different insurance companies on their stock and fixtures destroyed in the late fire.

Mr. J. A. Charnley, one of the victims of the Eddy st. fire, has received the amount of his insurance, about \$7,000.

Clark & Turner, burned out in the late fire, have received a check for the amount of their insurance in full, \$15,000. They are now filling all orders on time, and with little or no inconvenience from their late loss.

Mr. Chas. F. Irons, it is reported, has bought the "Emblem business" of the late firm of Hudson & Farnum, consisting of goods, stock and tools.

Mr. Wm. H. Waite, of Waite, Thresher & Co., this city, is now sojourning in that land of roses and sunshine, East Pasadena, California.

Mr. Edwin Lowe, the gold plater, of No. 82 Clifford St., has been confined to his home for the past two weeks, suffering from inflammation of the main artery of the left leg. He is attended by Dr. Gardner, and is considered to be in a very serious condition. He has the sympathy of his many friends in this sad affliction, who wish him a speedy recovery.

B. Lauer & Co., of Paris, France, importers of precious stones, have opened an office in room 41, of the "Wilcox Building," this city.

The following well-known manufacturing jewelers, attended the dinner of the Commercial Club, given at the Naragansett Hotel, on Saturday evening, March the 24th: Edwin Lowe, Walter Gardiner, Dutee Wilcox, Fred. I. Marcy and H. C. Dorchester. The dinner was one to be remembered in more ways than one. The speakers of the evening were Senators Chace and Aldrich, and Thos. G. Shearman, of New York, the great tariff reformer and lawyer.

Mr. W. H. Ryder, of the Scovill Manufacturing Co., was in the city the past week, and was able to place some very flattering orders. Mr. Ryder is the most popular salesman that comes to this market, having hosts of friends amongst the manufacturing jewelers, by whom he is well liked and who place implicit confidence in his word.

Mr. John L. Fowler spent a few days with his mother, at the family residence on the Hudson, during the latter part of the month of March, and enjoyed himself immensely, and only wished that the days could be extended to weeks.

Cameron & Bowers, manufacturing jewelers, of 107 Friendship st., have originated many new designs in fancy wires, which are destined to be very popular with the trade. Their new ring and chain wire should not be passed by, without an examination, by those who always keep abreast with the times.

Mr. H. H. White, who suffered a total loss by the fire on Feb. 15th, is located at No. 13 Mason st., where he is now prepared to ship orders as fast as received. Mr. White held no insurance on stock or fixtures.

Mr. Chas. F. Irons and his sisters, who are rustivating down

amongst the orange groves of Florida, at Belleville, report the mercury as being way up in the eighties, and extremely pleasant, which is interesting news, considering the reports received daily of blizzards and unpleasant weather in this section.

Mr. John Hoagland, formerly of the firm of Pearce & Hoagland, has started in business again at No. 17 Warren st., under the firm name of John Hoagland & Co., where he will manufacture a full line of gold pens, pen holders, pencil cases, etc.

The suit of Mr. Chas. S. Pine, which was to have been tried in New York the past week, has been postponed. Mr. Pine sues for \$10,000, for personal injuries received during the burning and sinking of the Steamer "Stonington," some six years ago, from which he has never fully recovered.

Mr. Horace Remington informs the trade that he has admitted his son, Mr. Albert A. Remington, as partner, to date from April 2d, 1888. Hereafter the style of the firm will be Horace Remington & Son, at 37 Potter Street, where they will continue to carry on the gold and silver refining business as formerly.

Mr. T. C. Hudson will continue to manufacture his patent bracelet as formerly.

C. G. Bloomer & Son, have decided to locate on their old site at Pawtuxet as that town has decided to provide for a fire service and preparations are already well under way to commence re-building the structure.

Mr. Wm. H. Luther on the 31st of March admitted as a partner in his business his son, Mr. Fred. B. Luther, the style of the firm name being changed from that of Luther Bros. to that of Wm. H. Luther & Son.

Mr. John Austin admitted on April 2d, as partner in his business of refining gold and silver, his son, Mr. Arthur E. Austin. The style of the new firm name will be John Austin & Son.

The firm of Dickinson Bros. has been dissolved by mutual consent, Mr. C. S. Dickinson retiring. The business will be continued as formerly under the same firm name, by the remaining partners, Alfred E. and James Dickinson.

The firm of T. C. Tucker & Co., No. 111 Summer st., has dissolved by mutual consent, Mr. C. A. Norton retiring. The business will be continued under the same firm name by Mr. Tucker.

The firm of Norton & Co. has dissolved by mutual consent, Mr. W. E. McLane retiring. The business will be conducted as formerly under the same firm name.

The Manufacturing Jewelers' Board of Trade has notified its members that a judgment for \$8,000 has been entered against B. Kamak & Co., of No. 112 Chambers st., New York City.

Ramon Pina, commission merchant, of No. 17 Broadway, New York, who recently assigned to Francis F. Padro, making preferences of \$3,192, has an extensive list of creditors among the manufacturers located here.

The Manufacturers located here have received notice of the dissolution of the firm of Hurd, Waite & Co., of Brooklyn, N. Y., which took place on March 31st, last. The affairs hereafter will be continued as formerly, and the style of the new firm name will be Hurd & Waite.

The Manufacturers doing business here have received notice from Davis Bros., Bergmann & Co., of San Francisco, Cal., that they have changed the concern into a corporation with Mr. Ansley G. Davis as president, Eugene G. Davis, vice-president, Jacob Bergmann, treasurer, Wm. H. Vincent, secretary and B. N. DeLeon, ass't. secretary. The style of the name of the corporation is Davis Bros., Bergmann & Co., and they have bought the entire stock of merchandise and fixtures of the old firm, and will carry on the business as formerly.

The firm of Pearce & Hoagland, of No. 29 Point st., has been dissolved by mutual consent of both partners concerned. The business will be continued as formerly at the old number by Mr. Frank T.

Pearce, who will soon take the road and with one of the finest lines of goods to be found in the market. Mr. Pearce is a live salesman and he will be heard from later on.

An act to incorporate the Burdon Seamless Filled Wire Co. was presented to the General Assembly on the 8th ult. by Levi Burdon and others. The bill was ordered to be laid on the table until the next General Assembly. The object of such an incorporation is the manufacture and sale of jewelry and articles of gold and silver.

Mr. Horace Remington, the gold and silver refiner, has commenced the erection of a five story brick building on the corner of Friendship and Page streets, to be used as shops for the manufacture of jewelry. The structure will measure 80x40 feet on the ground floor, and steam power will be furnished occupants throughout the entire building. It is reported that applications have already been made by enough different firms to more than take up the whole five floors.

Freeman & Green, of New York, counsellors, acting in the interests of the Manufacturing Jewelers' Board of Trade, of this city, have recorded the following judgments against Payne, Steck & Co., of New York: in favor of Wm. M. Fisher of Eddy street, for \$82.65; G. K. Webster, \$260.77; Nathaniel Barstow, \$226.87; Richmond & Co., \$606.55; Brown & Dorchester, \$328.29; S. B. Champlain & Son, \$176.32.

The Wilcox Building, owned by Mr. Dutee Wilcox, came very near being the scene of a very serious conflagration recently, some one unknown having entered the building and turned on the gas from at least a dozen jets, having previously lighted one and turned it down low, so that as soon as the room should become full, the lighted jet would ignite the gas which had already escaped from the open burners, and cause an explosion. It was, however, discovered just in time by the janitor. The building is occupied partly by the Manufacturing Jewelers' Board of Trade, Hahn & Co., and the Jewelers' Mercantile Agency.

Mr. C. Anthony Fowler, of Fowler Brothers, has been in the city for the past ten days, and made during the time two trips down the road after trout, and succeeded in hooking with the "fly" some fine speckled beauties.

FAIRFAX.



President, HENRY HAYESOf Wheeler, Parsons & Hayes,
First Vice-President, JOSEPH B. BOWDENOf J. B. Bowden & Co.
Second Vice-President, CHARLES G. LEWISOf Randel, Baremore & Billings.
Third Vice-President, JAMES P. SNOWOf G. & S. Owen & Co.
Fourth Vice-President, ROBERT A. JOHNSON.....Of Celluloid Show Case Co.
Secretary and Treasurer, WILLIAM L. SEXTON.....Of Sexton Bros. & Washburn.

EXECUTIVE COMMITTEE.

GEO. H. HOUGHTON.With Gorham Mfg. Co.
WM. H. JENKS.....With Tiffany & Co.
A. A. JEANNOT.....Of Jeannot & Sheibler.
GEORGE R. HOWE.....Of Carter, Sloan & Co.
WM. BARDEL.....Of Heller & Bardel.
J. R. GREASON.....Of J. R. Greason & Co.

THE JEWELERS' CIRCULAR is the *exclusive* official paper of the Jewelers' League and has been selected for the publication of all matters of interest pertaining thereto. Letters or inquiries pertinent to its business or purposes, and which might interest the trade or inquirers, will herein be answered. Address *Jewelers' League, Box 3,444, P. O., New York*, or the office of THE CIRCULAR.

At the monthly meeting of the Executive Committee of the Jewelers' League, held on Friday, the 6th inst., there were present

Vice-President Lewis, and Messrs. Greason, Jeannot, Bardel and Sexton.

Seven changes of beneficiaries were granted.

The death was announced of J. J. O'Brien, an employee of Theo. B. Starr, this being the only death known of by the Executive Committee.

One application was rejected, and the following six applicants were approved and admitted to membership:

Marin Le Brun Cooper, of Cox & Sedgwick, N. Y. City, recommended by Stephen P. Cox; Carl Cronenberg, with A. R. Griswold & Co., New Orleans, La., recommended by Wm. Bardel; Robert C. Green, Jr., of Pottsville, Pa., recommended by H. M. Shorthlidge; Edward Holbrook, of Gorham Mfg. Co., N. Y. City, recommended by Geo. H. Houghton; Carl H. Peters, with J. L. Sweiger, Selma, Ala., recommended by J. L. Sweiger; Isaac Sternberg, of Savannah, Ga., recommended by M. Lissauer.

The next meeting of the Executive Committee will be held on Friday, May 4, 1888.

Watch Repairing.



IN HIS SERIES on watch repairing, X. O. N. says: Let us presume that we have a $\frac{3}{4}$ plate lever key winding watch to clean. If the watch is not very dirty and the oil is not in a very bad state, that will be sufficient evidence that the watch has not failed from that cause alone; but even if the oil appears so bad as to account for the stoppage or irregularity, that should not prevent a careful examination of all the parts of the watch. The proper time for this examination is when taking the watch down; that is, the cursory examination that can only be given to a watch with a view to its repairs. When a watch is taken out of the case, the hands and dials are usually first removed, and, as a rule, this is easily done; but it is seldom carefully done and many broken dials are the result, as if the hands, either of them, fit very tight they are *pulled off*, generally with a pair of nippers. I have seen descriptions of a good many tools for removing the hands, but the simplest and best is a pair of old pliers with the points softened, bent and filed up like very thin nippers, so that these points will get under the boss of ball of the minute hand, and the wedges pressing from either side force up the minute hand without in any way affecting the dial, as the pressure is on the hour wheel and canon pinion. Every repairer knows the difficulty of getting the minute hand off some of the Swiss watches without some better tool than a pair of nippers.

When the dials and hands are removed, the balance should be taken out and the spring taken off and put into "benzole" for a few minutes; this will remove dirt or oil should any be found on it; then if the balance is put in its place the end shake can be tried and corrected. If the balance has more than perceptible end shake you may expect irregularity in the time keeping of the watch; the shake of the impulse pin in the lever watch is not very likely to be wrong, but it should be seen to, as the least side shake here will lessen the vibration of the balance. The position of the banking pins is likely to be more uncertain, as one of the expedients of repairers is when the cleaned watch will not go, to bend the pins either out or in. Although a lever watch will go, it will not go well with the bankings too wide apart, in consequence of the great amount of run the wheel teeth have on the pallet, and therefore the closer the banking the better, if the guard pin is free of the roller in all positions. The

amount of shake the lever may have when the watch is in a horizontal position is a bad test, as there may be too much side shake in the balance holes; therefore, the only safe way to try this is to hold the watch in a vertical position, the balance uppermost, and if, when the balance is made to vibrate slowly, as it will do without the spring, there is just sufficient freedom between the guard pin and on each side of the roller, that part of the escapement will be correct. This is a matter that is often the cause of a watch going badly and should be particularly attended to.

The balance should now be removed and the end shake of the scape wheel and pallets examined, also the action of the scape wheel on the pallets. That depth will probably be correct as it is very seldom that the teeth of the scape wheel are found to be worn sufficiently to make the depth too shallow, if originally it has been right. If the locking is not safe, that is, if the falling tooth does not drop well over the corner of the pallet plane, a new wheel is the only and easiest remedy. Should the top pallet staff hole be of brass and the pallets very close to the cock, it will often be found that the oil has been drawn from the hole into the pallets; this in itself will stop the watch, and should be remedied by taking out the pallet staff and turning a good chamfer out of the top side of the pallets; or it may be possible to make more room by pushing the pallet staff a little further through the pallets.

While the chain is on the watch should be wound up and the action of the stopwork examined, and also that of the maintaining power detent, and if either the barrel or great wheel are touching the plates or much out of upright by the wearing of any holes, the position can be noted and the error traced to its source.

The mainspring should then be let down, the chain removed, and the end shake and side shake of all the holes observed and the depths looked to; for, although the third and fourth wheels may be jeweled, a not uncommon cause of watches stopping is a bad depth on a pinion the wrong size, and a repairer must not take it for granted that because a watch has gone for a few years every part of it was originally correct.

If the holes are of brass, and any of the pivots or holes are worn so as to require new holes and repairs to the pivots, the depths should be tried in the depthing tool and re-made, irrespective of the old holes, and as the action of the new wheels and pinions are always nearer to the pillar plate than the top plate (of an English watch), the depth should be made in the pillar plate and the upright taken from it. All the wheels or arbors of a watch should be upright, but it is essentially necessary that the center and fourth wheels shall be so, else the hands will touch one side of the dial while they will be too far away on the opposite side.

Supposing a new center wheel lower hole is required, and, as is often the case, the pivot is cut, the pivot should first be repaired; and if the great wheel and third wheel depths have originally been correct, the best plan will be to push out the old stopping in the plate, drill a hole in a piece of brass nearly as large as the pivot and turn the stopping to fit the hole—this being the way most finishers stop this hole; it will leave the depths as they were originally and is much easier riveted than a solid stopping. When the hole is broached to fit the pivot and the rivet of the stopping is turned down, if a new hole is required in the top plate, the upright should be got in as follows (by what is called "pegging" the hole): Place the center of the mandrel in the center hole and grip the plate with the dogs near to the outside edge of the plate, so that they may not be in the way of the top plate when it is put into its place; bring the rest of the mandrel within about an inch of the plate; cut a point on a long peg and insert the point in the center hole, allowing the peg to lie on the rest; turn the mandrel round slowly, and if the outer end of the peg moves up and down the frame must be tapped gently on the edge until the motion of the peg is scarcely perceptible; screw up the dogs, and, if the stopping has been riveted in the top plate, the plate can be screwed into its place and the hole drilled and broached in the mandrel to very nearly the size of the pivot.

Although broaching in the mandrel is not a bad way of opening a hole, it is always better to open it to nearly the required size by running a cutter through it, if the hole is large enough to admit of this being done; but, as the cutters are easily broken, in consequence of their being so small, turning out holes is not often resorted to by watch repairers.

Watch repairers do not seem to like the mandrel, but the more they use it the better will their work be done, and it will certainly save their time to do so. If the fusee requires new holes, and the center wheel holes are right or have been renewed, the teeth of the great wheel will often be found worn and sometimes bent from the wheel having been softened in gilding—the teeth being much longer than is necessary and the spaces cut square at the bottom—and in the case of the teeth being worn from the center pinion, being a wrong size and the depth too shallow. A new wheel would, of course, be the proper remedy for this; but if this may not be done, the teeth should be hammered carefully, the depth tried in the depthing tool, and when the stopping in the pillar plate or bar is pushed out, the depth marked across the hole. The hole should then be drawn until the mark is in the center of it and a new stopping put in. The great wheel depth should always be as deep as possible; it is a mistake to make it shallow, because it will then run more smoothly. But supposing the lower fusee hole does not require any alteration, and a new top hole only is required (a repair often wanted), if the old stopping in the plate is removed or—in the case of a $\frac{3}{4}$ plate watch—the fusee piece is broached large enough for a stopping, if a piece of brass is broached to nearly the size of the pivot and then turned to fit the hole in the plate or fusee piece and riveted; if the hole is again broached to fit the pivot and the fusee put into its place in the frame, the chances are twenty to one against its being upright; whereas, if the method I have described of pegging the lower hole and turning out the upper be adopted, the upright of the fusee will be secured without further trouble; and, if it is not perfectly upright, the stopwork is most likely to be wrong.

If the barrel holes are worn, and the barrel is, as it often is, out of truth, it may be better to put in a new stopping in the barrel and get it true by the cover; but generally it will be sufficient to close the holes by laying the barrel on a small round stake and hammering up the boss from the inside of the barrel. This boss is usually left large, and if it is hammered on the outside edge the hole will be closed, when it can be made to fit the pivot by broaching with a round broach, and it will be good enough to last for years; this repair is often an improvement, as it lessens the rubbing surfaces of the shoulders of the barrel arbor pivots. If the hole in the barrel cover is too large and the cover too small, from the expansion of the barrel, from the breaking of strong mainsprings, the best remedy is a new cover which any one can make without special directions; but in the case of a new cover being made, the barrel is not likely to be true and the cover should be snapped into the barrel before it is brought to the proper thickness; if, when the end shake of the arbor is adjusted, the arbor and barrel are put into the callipers, it will be seen if the barrel is true—if not, the cover should be marked on the high side, taken off and turned until it fits easily, and then hammered carefully on the outer edge of the side that is marked until it fits the groove of the barrel, and this, if done the required amount, will bring the barrel true. When a barrel cover is hammered on one side until it is out of round, the barrel and cover should be marked in order that the cover may always occupy the same place.

TO TEMPER SMALL STEEL PARTS.—I temper pinions and other small steel parts in the following simple manner: I take a thin piece of copper, say, from an old dial, scrape soap upon it, bend it together and lay the article between; I then bend the sheet firmly together and make it red hot upon a coal, and then anneal it in oil. Not even the most delicate object will warp in this manner.



[From our Special Correspondent.]

ATLANTA.

I find that THE JEWELERS' CIRCULAR is growing in popularity in this part of the country, and it ought to, for it is the leading expounder of the problems in this great business. Frequently have I heard it commented on, and its articles praised for the value and sound practical sense they contain. It is accomplishing a deal of good in the South, and its increasing circulation will, no doubt, be of material interest both to its proprietors as well as to those who may subscribe.

The jewelry trade for the past month has been about like it was during the month of April. While it has not been anything extravagant, it has been up to the standard one would naturally expect. The wholesale jewelers in this city always seem to be doing a good business, and I never go into their store rooms but what they say they are behind with orders. This, to be sure, is quite a healthy state of affairs, and if it continues will bring riches to those engaged in it. The retail trade has been dropping off a little bit, yet hardly to such an extent as to be noticeable.

For a city the size of Atlanta—73,000 inhabitants—there are a good number of jewelry houses in it.

There is F. J. Stilson, one of the pioneers in the business, and who numbers his friends by the thousands.

Freeman & Crankshaw, one of the best firms in the city, have a reputation second to none.

Mr. F. C. Wade and Mr. W. W. Woodcock have formed a partnership and are specialists in engraving and designing. There is much expected of this firm, and the public is not likely to be disappointed.

Mr. L. M. Cox and Mr. Er. Lanshe constitute a firm that does considerable business. Their storerooms are on Whitehall street and in the business center of the city.

J. P. Stevens & Bro., who are known all over the South for their enterprise and push, make another house. It is one of the best in the South. Mr. J. P. Stevens, the senior member of the firm, is at present in California on a business trip.

Mr. Lem McMillan runs a small store at 410 Whitehall street, and is meeting with success for one so young.

Mr. A. F. Pickert is the watch seller of Atlanta. He will sell watches. It seems as though he had a mania for that particular branch of the jewelry business. The stock he always keeps on hand is of the finest assortment and very salable.

The old reliable, Mr. William Bollman, is always to be found at his stand on Whitehall street. Go there any time and ask for Mr. Bollman and he is in.

There is A. L. Delkin & Co. It has been my pleasure to refer to this firm before. It is composed of young men, Mr. A. L. Delkin and Mr. H. A. Maier. Mr. Maier is the junior member and is rapidly coming to the front. There are not two nicer and more accommodating young men in Atlanta than they are, and the large business they are doing is proof positive of their popularity.

Mr. F. S. Doyle, who entered business last September, failed the other day. Just how and the cause of his failure had not yet been explained. It is thought he was too generous and sold on credit. He had only limited capital, and using a good deal of it for fixtures left him very little upon which to operate.

Mr. A. G. Maumee, on Marietta street, is constantly increasing his stock and is building up a nice trade.

Mr. L. Snider, who recently began business here, is meeting with

his share of success. He keeps a splendid assortment of the best goods.

Mr. E. A. Johnson, who for several years had been connected with the firm of Freeman & Crankshaw, has gone to Rome, Georgia, and opened a retail store at that place. Mr. Johnson is one of the best and most popular young men in the South, and, no doubt, will have much success in his new field.

Mr. A. G. Gerbie, since moving into his new stand on Decatur street is looking more cheerful, and the indications are that his business is up to the standard.

A. P. Maier & Co., on Marietta street, are in the wholesale business, and it is their motto to sell the best goods at the most reasonable prices.

T. J. K.

Advice to Watchmakers' Apprentices.

BY A MAN WHO HAS SPENT TWENTY YEARS AT THE BENCH.



THE POLISHING of Metals is a subject I have had occasion to speak of several times, and on different occasions I gave specific methods for accomplishing certain results. In this paper I propose to consider the subject in a broader field and speak of the matter more in a philosophical sense. Polishing commences in a coarseway, and is then called grinding. In this article I shall probably repeat many ideas and plans in every-day use, but still I hope to give at least some of my readers a disposition to do their work in a systematic manner and give hints for using the kind of material best adapted for work in hand. Now material perfectly proper for grinding and polishing soft metals is in many instances totally and entirely unfit for use on hard material or *vice versa*. As, for instance, rotten stone is the material *par excellence* for intermediate grinding or polishing with silver or gold. As, for instance, in a piece of gold work we first file it, then use emery or Scotch stone to remove file marks. Now comes the intermediate state between grinding and polishing, where rotten stone is exactly what we want for preparing the surface for the future polish. This is a feature of the action of rotten stone few artisans are able to explain why it is; it is perfectly worthless as a grinding or polishing material for steel, either in its soft or hardened state. Many will say it is too soft in its nature; how is this, when it will polish rapidly the precious stones which are much harder than hardened steel? The true answer is the particles forming the mass of the substance called rotten stone is not of the proper form for cutting steel, while emery is. But the particles of emery, no matter how fine it is reduced, always present an angle and leaves a dull surface both in metals and glass or kindred fine-grained stones. Corundum, which may be considered as a twin brother of emery, has a slight difference in the shape of particles, and, consequently, has a different action; but the advantage of corundum over emery, is for such purposes as grinding the artificial teeth used in dentistry. For grinding steel, either soft or hard, emery is in most cases the most desirable, although for small jobs, such as making parts of watches, oil stone dust cuts quite as fast and leaves a better surface for subsequent polishing. Coarser grinding on larger masses of iron or steel, is, in most instances, ground with grindstones of various degrees of grit, except in such cases as require surfaces of extreme accuracy, here emery wheels are used. I should say, however, that emery wheels are used too for rough grinding, especially of cast iron articles; this course is pursued for two reasons: first, an emery wheel leaves a sort of rough bright polish; second, cast iron articles which are ground on a wet grindstone rust very rapidly. Emery wheels for grinding are of two kinds: first, surface-coated emery wheels, pre

pared by applying a coat of strong glue, painted on with a brush to a wheel or pulley made of some strong hard wood, and then rolling the glued surface into hot emery of the proper degree of coarseness. Another kind of emery wheel is made of some substance united with the particles of emery, as, for instance, melted shellac; small emery wheels and so-called emery files are made in this way. Sulphur is also used to unite the particles of emery into a solid mass. Indeed there is a variety of substances used for this purpose, but most of the material is the subject of a patent, and for persons having use for such wheels it is best to buy them out and out, if the coated wood wheel cited above will not answer. Sometimes for smoothing metal surfaces like brass or German silver, a strap of leather is drawn tight around the wood and glued fast, the ends being cut thin and made to lap, and glued so as to make an almost imperceptible joint; over the leather the glue and emery are applied as directed for the wood pulley. The leather gives a sort of elasticity to the wheel. The great secret of using solid emery wheels lies in giving a high velocity to the wheel. The surface should have what is termed a peripheral velocity of at least 2,500 feet to the minute. If wheels exceed 7 or 8 inches in diameter they are liable to burst and the high velocity throws the fragments with a powerful force. For smoothing soft metals like silver, after filing, many workmen dispense with the stoning, using a brush revolving with medium speed, and the brush charged with pulverized gas coke or pumice stone; following with a brush and coal ashes. Oil is used with the substances just mentioned. Coal oil will answer, making a paste of a creamy consistency. Some parties contend that soft coal ashes are best and others say any coal ashes. The facts seem to be that either kind will answer, if they contain the proper amount of silica (the base of common sand). The ashes for silver work should be ground and sifted, then mixed with water and well stirred, allowing the coarser particles which would scratch badly, to settle. While the finer particles are still floating around in the water, most of the water is poured into a dish for the finer particles to settle. The coke is prepared in the same way, after being ground by beating in a mortar, sifted and then mixed with water and settled off. Some workmen use hard coke, made from hard coal, although I fancy it would be difficult to explain why. Coal ashes cut rapidly and leave a fair surface for subsequent polishing; although it cannot be claimed it is equal to the surface left from rotten stone. The final polish of all soft metals is effected by rouge, and the perfection of polish depends on two essential things, the first is absolute cleanliness, which extends to seeing no grit gets into the rouge (mixed with oil), or that any of the particles of grit from former processes are left on the article to be polished. Careful washing with soap and water will generally remove all the grit left of the coal ashes or rotten stone, and good rouge needs only taking care of to ensure its purity and freedom from grit. It is well to remember that all file marks and scratches of every kind are to be perfectly removed before attempting to polish. A perfect polish has no blue look, hence the saying with workmen a "black polish," when speaking of a perfect job in this way. Polishing of steel is effected by tin or zinc laps using diamantine and alcohol or preferably hard burnt rouge and some heavy oil, like opium or lard oil.

Obituary.

FLORIAN QUINCHE.

The death of Florian Quinche, announced briefly in our Gossip columns last month, which occurred on March 27, has taken away another of the old landmarks of the jewelry trade.

Mr. Quinche was born in Neuchatel, Switzerland, in the year 1823. He acquired a knowledge of watch making when a mere boy, and at the age of fifteen went to London, where he was employed by

Robert, Stauffner & Co. He became thoroughly proficient in the art of watch making and was very much attached to it.

In 1843 he left London and came to New York, where he secured a situation with the old house of J. H. Robert. After a lapse of several years, during which he had been with Robert and afterwards for a short time with Lucien Morrell, he entered into partnership with Mr. Charles Krugler, under the firm name of Quinche & Krugler, which firm has long been well-known as importers of Swiss watches. Two years ago the firm was dissolved and Mr. Quinche continued alone. It is expected that Mr. Borel, of Borel, Courvoisier & Co., Neuchatel, Switzerland, of which firm Mr. Quinche had been the agent for many years, will shortly come to America to wind up Mr. Quinche's affairs.

Mr. Quinche was well known upon the Lane and to many persons in the trade. His reputation was of the best, and he was highly esteemed wherever known. The disease which probably caused his death was of long standing, for he had been a sufferer from chronic liver complaint and neuralgia for many years. The day before his death he was in his usual health, but early the next morning he fell into several violent paroxysms and died in consequence of the exhaustion caused by them. He leaves a wife and three daughters.

GEORGE W. CHATTERTON, SR.

George W. Chatterton, of Springfield, Ill., died on March 27, aged 66. The announcement of his death in Springfield cast a gloom over the entire city, for Mr. Chatterton was one of the foremost citizens of the place, and wielded considerable influence in political, social and business circles.

He was born in Ithaca, N. Y., March 3, 1822, and was the son of Daniel Chatterton of that city. When yet a boy he was apprenticed to learn the jewelry trade in New York City. This trade he completely mastered, and went to Springfield a poor man in 1842. There he entered the jewelry store of his uncle, Charles Chatterton, which was established in 1838—located on the same ground where the present building was afterwards erected. Here he labored faithfully and soon purchased an interest in the business, and a few years later became the sole proprietor. In 1874 he left his large business in the hands of his son, George W. Chatterton, Jr., went to New York City and engaged in the manufacture of jewelry on John street, in the firm of Chatterton & Dodd. This continued until the year 1882, when he returned to Springfield.

He was a leader in several important public enterprises and improvements, and his name was invariably found at the head of subscription lists in aid of some worthy object. He had been something of an invalid for several years, suffering from a chronic bronchitis, and for some months before his death complained of a numb feeling in his limbs. He leaves a wife and three children, two sons and a daughter.

JOSEPH ZENTMAYER.

Joseph Zentmayer, of Philadelphia, a well-known optician, died on March 29. He was a native of Germany, and came to America in 1848. He was a noted expert in matters pertaining to optics, and he invented several instruments of a scientific nature. The Franklin Institute in 1874 awarded him a gold medal for the best scientific inventions of the decade. He was well known in scientific circles, and was a member of many organizations interested in scientific matters.

CHARLES DICKINSON.

Charles Dickinson, President and Treasurer of the Waterbury Watch Company, died suddenly of heart disease on April 15, at Fortress Monroe, Va. Mr. Dickinson was born at Saybrook, Conn., on the 7th of September, 1826. Early in life he received a practical business training, and during his young manhood he was engaged in

business at Williamsburg, Mass. In 1851 he went to Waterbury, Conn., and became the Treasurer of the Waterbury Jewelry Co. He left this position shortly afterwards to accept a better one with the Benedict & Burnham Manufacturing Co. Here he occupied for a time a responsible position in the office, and afterwards did some traveling for the company, at that time a very important position. In 1866 he was made the Secretary of the company, and in 1881 he was elected Treasurer. In the meantime the Waterbury Watch Company was formed, with Mr. Benedict as President and Mr. Dickinson, Secretary. Upon the death of Mr. Benedict, Mr. Dickinson was elected his successor. In 1885 he also became the President of the Benedict & Burnham Mfg. Co., upon the death of Gordon W. Burnham.

At the head of these two important enterprises, Mr. Dickinson showed a marked business ability. They both prospered under his wise administration, and in the watch company especially a very noticeable progress has been made, as is known to the entire trade. Mr. Dickinson was also interested in several other important business enterprises, in all of which he manifested much interest. In social matters he also kept interested, and had a wide acquaintance. He was the Second Vice-President of the Waterbury Club, a local social organization. While business and society required so much of his time he did not neglect his home. His wife, who died only last year, was a very estimable woman and was much loved by her husband, who never regained entire cheerfulness after her death. They had four children, of whom three survive—a son and two daughters. It was with the younger of his daughters that he recently decided to make a pleasure trip to Fortress Monroe, and while there he seemed in excellent health and spirits. The sad news of his sudden death, just as they were preparing to return, has been a severe shock to his many friends and business associates. The funeral was held on Wednesday, April 18, from his home in Waterbury.

Problems in the Detached Lever Escapement.

BY DETENT.



THE WRITER has refrained from speaking of adjustments in these articles from a sense of the importance of the perfection of parts being necessary before any adjustments were attempted. Many inexperienced workmen I have met seem to think adjustments were something to make amends for all sorts and kinds of imperfections, as, for instance, if the pivots of the balance were not round, or the jewel holes too large, all one needed to do was to adjust the watch to isochronism and everything was lovely. I have known instances of men paying to have a cheap Swiss movement adjusted, thinking that then the irregularities would be remedied. In the first place, no man who was not a rogue would undertake a job of this kind, supposing he had the skill to adjust. It is only after the most absolute perfection of workmanship that adjustments should be attempted. Some of the lower grades of American, if a man will take the bother, admit of approximate adjustments, as, for instance, a No. 6 or 7 Elgin or a Sterling can be adjusted to give fair results, but the escapements have to be gone over and the hole jewels to the balance inspected to see if perfectly polished. The careful system of measurements generally ensures the fit of the pivots to the holes. The pallet stones must be set so the watch will run on half time, that is, without a hairspring, and then about all one could expect, even if a skilful adjuster, would be an approximate heat and cold adjustment, effected by changing the screws in the balance rim back and forth relative to the balance arms. As, for instance, you put your watch into the cold box, and for close adjustment, for actual service, this should not be lower than 50° F. Many workmen expose their movements to a temperature of less than 40. This is

a mistake. The curb compensation never compensates correctly in extreme temperatures. I don't mean by this that a balance cannot be made to compensate as well for a temperature of 40° F., or even zero, as any, but the extreme range to which the balance is adjusted should be as small as possible to give fine average results. For a pocket watch, if it is adjusted to temperature from 65 to 85° it will give better practical results when in pocket service than if the attempt is made to ensure a greater range of temperature, as all composition balances show abnormal variations when a range is attempted of more than 20 or 25°. If, on placing your watch in room or box constantly maintained at 50° F., you found it to gain from its rate in a room at 70°, you would change a pair of screws, taking one from each segment and put it one or two holes farther toward the cut end of the balance rim. If, on the other hand, you found the watch to lose by putting into a lower temperature, you know the balance is over-compensated and change a pair of screws by placing them nearer the balance arms. Frequently in fine adjustments the ordinary screws would be too heavy, then change the half screws. These are also used to bring the watch to time when the hair spring is pinned in on the line of centers; that is, when the balance is at rest, the point where the hair spring is pinned into the collet, the curb pins of the regulator and the center of the balance staff are in a direct line, and the watch is brought to time by changing the weight of the screws, or turning the time screws in or out for close regulation. In this case half screws are used, and also the screws are cut out under the head to lighten them so the watch is brought to perfect regulation with the regulator standing in the center. This is the means adopted to adjust to heat and cold, though I have only given the A, B, C. As in fine watches the workman is required to so fit up the balance so it will poise perfectly at 60, 75 and 90°, a feat more easily imagined than accomplished, as we can readily understand when we give the subject careful thought. Suppose in one of the segments of the balance the steel rim is thicker than on the other, does anyone suppose the two segments will curve exactly alike with the same temperature? Any mere tyro will understand this. The usual proportion of steel to brass is two-fifths. The adjustments to isochronism and position are still more difficult and exacting, and should never be attempted only in the higher grades. The watch repairer should look to the financial side of the problem; there is not one watch in five which comes in for simple cleaning but needs some repair, and the customer sets up a howl if any additional expense is incurred, and when it comes to testing and correcting the adjustments—whew! “That watch was all right before you took it,”—no matter what the facts may be. Not one customer in fifty would be willing to stand the expense or wait the time absolutely necessary to restore adjustments. For the benefit of those who have a fancy for experimenting with isochronal adjustment with the ordinary flat spring, I would say: take a good fine watch, see it runs on half time, examine if the hair spring is perfectly true in the round and in the flat, then pin in so the collet pin and curb pins are in line, as directed above, then bring the watch to time by the screws. Now wind your watch up but a little way so the balance has but a small motion, *i. e.* turning about $\frac{1}{3}$ of a revolution each way from the point of rest; wind your watch every hour for six hours just enough to make up for what it has run down, and see if it has gained or lost on its average rate as compared with a standard clock. This will tell you if it loses or gains in the short vibrations. Now wind the watch full up and see what its rate is in the long vibrations; keep winding every hour, as before, to ensure the longest vibrations. Now for the corrections. If your watch loses in the long vibrations let out the spring a little and bring the watch to time by the screws again. If it gains in the long vibration take up the hair spring a little and bring the watch to time by the screws. If by this course you cannot make the long and short vibrations alike, put in a new spring. The short vibrations should be in a club tooth lever escapement 4 or 5 seconds in 24 hours, the quickest to give good results.



[From our Special Correspondent.]

KIMBERLEY, March 13, 1888.

That vast, disjointed, and, at present, disunited portion of the earth's surface which on the maps of the world bears the cognomen of South Africa, only occasionally makes its existence known to the dwellers in the crowded countries of the Old and New Worlds. For months, frequently for years, it seems to be partially forgotten, and only some native war or some wonderful diamond or gold discovery engages a passing attention in Europe and America. All the while, however, life goes on in these colonies much the same as in other parts of this sublunary sphere. Ships come and go, people are born and die, there is birthing and burying, marrying and marring the same as elsewhere. Here, in the center of a desert, there is a town which is probably unique of its character. Fifteen years ago the site was only known to a few hunters and traders. To-day it is the liveliest place in the world. Forty-five million pounds worth of diamonds have been unearthed, and there seems evidence that hundreds of millions more are still in the bowels of the earth. There are gathered here men of nearly every nationality, and every language under the sun is spoken. There are as many Jews as could ever be found in Jerusalem, and the Hebrew character is seen on its worst and on its best sides. The most adventurous and the cutest men of every country seem to have been attracted here. Men who for half a lifetime struggled with poverty have become millionaires in a few years on these fields; men who brought here what in other places would be regarded as fortunes, have in a short time been beggared. There are to be seen in squalid poverty men who seven years ago had £100,000 each in cash. There are men with practically unlimited means now who six years ago arrived in rags and penniless. From their very beginning the fields have had an extraordinary history, and to-day they are furnishing as much of the marvellous as any locality in the world. However, it may be assumed that nearly every reader is, to some extent, acquainted with the diamond industry, and that the present aspect of affairs is what will most interest.

Amalgamation is slowly proceeding, and it seems certain that the wealthy capitalists will eventually become possessed of all the important mines. The result upon the outside world will be that the output of diamonds will be so regulated that prices will, to a certain extent, be ruled on this side of the water.

The present extent of the diamond industry in South Africa will, however, best be shown by quoting authoritative figures. These are published by the Mining Board, a body appointed from the principal shareholders, to generally uphold mining interests. It is seen from these returns that during the year 1887 the value of diamonds exported was not less than £4,251,837, or an increase of £744,627 on the previous year. It should here be remarked that every diamond found has to be officially registered, and in this way the values are ascertained. The average value per karat last year was 23s. 7d., and it is, to some extent, remarkable how little this average has fluctuated here during the last five years. The highest price was 24s. 9½d. in 1884, and the lowest price was 20s. 5d. in the following year. The average value per karat for the last five years was 22s. 9½d. It is worthy of note, too, that towards the close of last year, particularly in December, there was a marked increase of production, and one must assume that this is owing to closer supervision, more careful management and possibly a temporary abatement of illicit trade. The trade in diamonds now surpasses all other branches of industry in the Cape Colony, and everything concerning it is of great interest to residents in the country.

Respecting the illicit trade, it seems certain that it exists to as great extent as ever. Convictions are frequent, but elaborate as is the detective system it fails to reach the principal actors in the lively drama. This week a man named Joseph Contat, who is known to be possessed of fully £40,000 in genuine property, has been convicted and sentenced to five years' imprisonment and to pay a fine of £1,000. In this case the trap was a white woman. There are now about three hundred men and women on the Capetown Breakwater under sentence for the crime of illicit diamond buying. Whether all are guilty or not is a question impossible to answer. There have always been serious complaints of corruption on the part of the detective department and perjury on the part of the traps. Some months ago a Government Commission took evidence on this matter, and their report is anxiously awaited. It is rumored that they will recommend to Parliament the repeal of the Diamond Trade Act, and that the trade in diamonds should again be thrown open. In the meantime the traffic seems to flourish. The diamonds are purchased from native employees who hide them in unmentionable parts of the body, or swallow them and allow them to pass through the corpus. The illicit now seem to make Natal their headquarters, as the government of that colony decline to pass a prohibition act.

Funny things, nevertheless, occur occasionally, and betray the cunning and the cupidity of humanity. The other week a very respectable Wesleyan tradesman was traveling from Port Elizabeth to this place. In the train he met an exceedingly charming young lady, with whom he had a confiding conversation. The result was that she asked him to take charge of a small parcel she was carrying in her hand. He gallantly complied. Finding a suitable opportunity on the journey, which takes about forty hours, his curiosity prevailed and he opened the package. His consternation was great on finding some six thousand karats of brilliant gems. Although a gentleman of principle and position his avarice overcame him, and ultimately he agreed to purchase the parcel for £1,000 cash. The story of the young lady was, of course, plausibility itself. The transaction was completed in Kimberley, and the Wesleyan gentleman grew gratified regarding the £5,000 or £6,000 profit he had made by the illegal deal. He got the parcel safely to Port Elizabeth, and called in an expert to determine the exact value of the stones, prior to smuggling them away to London or Paris. The expert smiled at first and then laughed outright, and the irony of his laughter will probably haunt the Wesleyan for a long period. The brilliants were paste or crystal and were not worth a sovereign.

The newly-developed Transvaal gold fields have had an important effect upon this place. It is the principal town on the line of route from Capetown to Johannesburg, the eighteen-month old city of the future. Every day there are wagons and coaches leaving and arriving, and the scenes remind one of Australia and California. The output of gold is about £100,000 per month from all the fields, but there will be a great increase as soon as all the machinery gets working. Official figures show that over six million pounds is invested in the different gold mining companies in the Transvaal. The greater part is colonial capital.

Some large parcels of diamonds are now sent to Europe. This week Mr. Hall, a well-known merchant, sends £150,000 worth, and even larger parcels have recently been sent. They go by the ordinary mail, and, strange to say, since the fields were first discovered not more than £20,000 worth of diamonds have been stolen, so great is the vigilance of the government in this particular respect.

Local trade is generally brisk, and there is a great amount of coin in circulation. Since the railway was opened from Capetown the cost of living is somewhat less, but it is still high. The principal places of business are what, anywhere else, would be regarded as miserable, galvanized iron shanties. The offices of diamond dealers, whose transactions amount to thousands daily, would scarcely be considered good enough for stables in many parts of the world. This is a feature that strikes a stranger with surprise, but it is one of

the queer things connected with existence here. Nearly everybody lives very high and very fast, and champagne, cigars and cards, whiskey and women are notable features. The gambling and speculative spirit is exhibited everywhere nearly as strongly as formerly. There is little in the surrounding country to excite interest, and the materials for rational amusement are scanty. An opera company (Searlle's, from Australia), is at present having an exceptionally good season. Many of the mines are now illuminated with the electric light, and work proceeds all day and night, Sundays included. Time is really money in this region.

The diamond fields, nevertheless, continue exceedingly unhealthy as a place of residence, and the mortality during the last twelve months is simply shocking to contemplate. The official returns show that the death rate has been one hundred per thousand, or one in each ten persons. This is three times that of Bombay, Calcutta and Glasgow, which are regarded as three of the unhealthiest towns in the world. In addition to greater liability to attacks of the well-known ailments, the resident here has to risk what is known as camp fever. This disease resembles typhoid fever in its symptoms, but it also has other phases which baffle the highest medical skill. Every summer a large number of Europeans and aborigines are carried off by this terrible complaint. It is not contagious or infectious, and how it arises and what is the best mode of treatment has never yet been ascertained. At present there are about thirty medical gentlemen on the fields, and their practice is live y enough and apparently very lucrative. The average number of patients in the public hospital, a really excellent institution, is about two hundred.

In such a community human life is not held in great regard. In the fierce contest for wealth and amid such daily surroundings, men become callous. In no part of the world can one observe the eleventh commandment, "Man mind thyself," so prominently exhibited. Accidents, murders and suicides are of frequent occurrence. A dead native by the wayside excites little greater attention than a dead dog. For so comparatively small a place the number of mysterious fatalities is surprisingly great. Human passions are to be seen exhibited in their worst aspects. In every groove of existence there is the display of cunning, cupidity and sharp dealing, marking the character of the greater part of the population as unusually keen.

No diamond cutting is carried on here, and the jewelry worn is imported. In the country districts of the colony there is a large quantity of cheap American jewelry sold. The natives are just getting civilized enough to appreciate and understand *articles de luxe* of the easily made pattern, and in the future there is likely to be an immense trade done. At present, however, all the trade is in the hands of "smousers," the colonial term for Hebrew hawkers. And a very pertinacious class the latter are, and must, from appearances, gather in the shekels. The diamond princes and their families, of course, wear expensive and valuable articles, mostly imported from London, Paris or Vienna.



A Lady's Rambles Among the Jewelers.

THE Easter jewelry gave a fresh impetus to flower and bird subjects, especially the former, which promise to be popular models for brooches, hair pins, scarf pins and the like throughout the season. Enameled jewelry continues to be a popular sort, and so long as flowers and gay plumaged birds and butterflies are copied in gold and silver, colored enamels will play a more or less conspicuous part in jewelry.

CLOISONNE enamel in connection with *repoussé* gold work, beautiful as it is, has been of late years but little employed for personal ornaments. That it may come into favor again appears probable, since the Duchess of Edinburgh has set the example by having some exquisite work of this kind done for her in Paris. The work in question comprised a diadem, a bonbonniere and a flagon. The diadem is chased in gold open work, and parts of the flowers are enameled in brilliant colors. Similar work appears on the bonbonniere and the flagon, the outside surface of both being enameled with a conventional floral design in Persian style. The Duke of Edinburgh had a badge of the order of the Garter executed at the same time and in the same fashion, the figure of St. George and the Dragon on the obverse, as well as the royal monogram on the reverse, being executed in cloisonne enamel and chasing.

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ENAMELING in brilliant colors that makes everything else appear dull in comparison, is more or less represented in the Russian jewelry, that had quite a little boom in New York during the holiday trade. This style of enameling, also the black enamel, is seen, not only on silver jewelry, but articles of silver for the toilet and on odd pieces of bric-à-brac. A queer bracelet seen was a cable twisted, one with alternate strands of black enameled silver and silver in white finish. Translucent enamel is seen to good effect when encircled by a rim of gold that leaves the back of the enameled piece exposed.

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IN LARGE brooches there is a decided tendency to heraldic designs. Then there have appeared small brooches with historical and armorial devices, or enclosing coins, medals or cameos, and those of circular shape are so arranged, that by pressure of a spring the center can be removed and exchanged for another. In illustration of these latter may be cited the bust of Joan of Arc in *repoussé* silver, resting on two Lorraine crosses in onyx, and the bust of Mariè de Medici, painted on porcelain and enclosed in a circular setting of silver.

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THE enameled miniatures of some court beauty, surrounded by a sparkling rim of brilliants, continues to be a favorite brooch where cost is no obstacle to its possession.

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NUMBERED with novelties in brooches are circular ones of filigree or pierced open work, and set with small diamonds or pearls that trace out a date or monogram. The arrow is being employed to good effect in brooches. One seen was of gold, with the barb and feathered tip of brilliants, a pierced heart of rubies forming the center of the pin. A fine diamond brooch represents the conceit of two interlaced hearts, with a true-lovers knot at the top.

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ANOTHER new design is a dog's head in oxidized silver with a parasol in its mouth. A heart in brilliants with a dove flying through it is another conception. The newest primrose brooches have the flower lying on its leaf with a bud beside it, all colored true to nature.

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BRIDESMAIDS' brooches are sometimes presented in cases made in the form of a white satin high-heeled slipper of small dimensions. Diamond letters, about an inch long, are fashionable as pins and

brooches. Three or four fish in line, bars of gold with three horse-shoes strung thereon and three flies just settled have all been copied in the newer jewelry. The horseshoe figures in several new brooches, as, for instance, about two inches of gold curbed link chain, in the center of which is a horseshoe set with pearls, and a diamond fox head set in a gold horseshoe.

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THE pansy brooch is one of the class of ornaments in the shape of single flowers, which are now so much worn. These are used for fastening lace and are also effective, when made of gems, as a hair ornament. Butterfly brooches are pretty things both for the neck and the hair. A gem one seen consisted of a spray of leaves and blossoms, above which hovered two butterflies. The trefoil brooch, in small gems mounted on silver or gold, is still another variety of neck pin in style.

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THE anchor brooch in silver, with cable in gold and silver, is a pretty ornament, which it is thought will find a place this summer on yachting costumes.

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THERE is a wide diversity of styles in bracelets. Some are merely threads of gold with gold medallion pendants, on one side of which some device is engraved, while on the other appears an initial or date. Others are in Renaissance style, the open work links containing alternately a *fleur-de-lis* and a Lorraine cross.

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A GOLD bangle with the date of marriage engraved on it, with a tiny lock and key, is now often given to a bride on her wedding day, and when the ceremony is over, the bridegroom locks it on her arm and puts the key on his watch chain.

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THE leather bracelets, on the top of which is inserted an open faced watch, and designed for tourists and shoppers, are of foreign invention but are occasionally met with here. A recent English novelty is the combination sovereign purse and bracelet. The bracelet is composed of three narrow bands of gold, held apart by cross bars of gold, so as to form a bracelet of about three-fourths of an inch wide. In the center of the ornament appears a circular purse which, when closed, gives the appearance of a medallion.

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QUITE an effective all-gold bracelet is a flexible chain one, in each link of which appears a little gold ball.

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HAIR ornaments are, if possible, more popular than ever. The consequence is, that many of the specimens that represent a high order of workmanship are so made as to perform the duties sometimes of brooch and occasionally of pendant, but oftenest of hair ornament.

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AN aigrette conspicuous alike for its beautiful design and elaborate workmanship, is made of Brazilian diamonds mounted on thin silver wires, that sparkle against a background of pure white osprey feathers. This aigrette springs from a diamond crescent and star, that can be detached and worn as brooch or pendant.

A VERY pretty style of dressing the hair is effected by placing single stars or flowers between the puffs and coils of the hair. These small single pieces are mounted on tortoise shell or silver hair pins, which are easily thrust through the coiffure and in any desired position. The self-adjusting butterfly ornaments, several times described in THE CIRCULAR, have proven popular hair ornaments among the New York and Washington society ladies. Little diamond swallows and dragon flies mounted on hair pins, also make effective ornaments for the hair.

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THE owl is having a great run in London and is copied here to some extent in jewelry. Abroad, bracelets, brooches, scarf pins, hair pins and innumerable other articles all bear the effigy of the bird of wisdom, or, at least, its head, with two round solemn eyes of yellow topaz or yellow diamonds.

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AS THE season advances, scarf and lace pins, especially the former, assume a sporting aspect, in which are represented base ball, tennis, yachting, hunting and other outdoor pastimes. Otherwise, scarf pins may be said to imitate somewhat closely, in miniature, the designs brought out in brooches.

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A SCARF pin affected by some of New York's best dressers consists of a single colored gem in a glaze setting of platinum. A single white pearl encircled with a tiny band of gold, is another favorite style to wear with what are termed dressy afternoon suits. Men also favor the cat's-eye pin, but the stone must be a fine one.

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THREE small studs continue to be the correct style to wear with full dress. Fashion, at the present moment, gives first preference to small white pearls, though small diamond studs are probably oftener seen. Plain gold studs are selected when the more expensive ones are not desired.

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AS HAS been many times told in these columns, both linked and single sleeve buttons are worn by men. Some of the newer linked buttons have a single gem imbedded in the gold. Many of the newer single buttons are richly chased, and some show a chased center with a pierced border. The manufacturers of initial buttons report success with this style.

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BEFORE dismissing the subject of jewelry for men, it may be well to note the fact that watch chains, in many instances, are heavier than of old and more elaborate in design. The watch chain is no longer concealed with full dress, but worn across the waistcoat, same as with a business suit.

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PRECIOUS stones are fashionable as ever, especially diamonds and rubies. Topazes are also in more or less favor, as are fine cat's-eyes and sapphires.

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IT is pleasing to relate that fashion still favors, in the setting of gems, as little gold, silver or platinum, as the case chances to be, as

is consistent with retaining the stones. In a word, the gem continues to be the ornament and the setting merely a necessary accessory.

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NECKLACES show the same wide license, as regards design, as appears in other forms of personal ornaments. A very elaborate necklace seen not long since, was composed of diamonds and Oriental pearl drops in graduated sizes. In front appeared a double row of small festoons, from the centers of which hung pendant a pearl.

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RUBIES and diamonds, where money is no object, form the necklace *par excellence*; and this calls to mind the fact that the present of the Emperor and Empress of Russia to the Princess of Wales, at the late silver wedding of the latter, consisted of a diamond and ruby necklace.

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TO MAKE a long stride from the Princess of Wales to Fanny Davenport, in her latest play, *La Tosca*, one comes to consider the necklace worn by this popular actress. It is a gorgeous affair, and behind the footlights appears to be a blazing circlet, with numerous festoons composed of diamonds and rubies.

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BELT buckles, as well as silver belts, continue in fashion; indeed, with the style of round bodices promised by modistes, it looks as if belts must be worn on indefinitely.

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NUMBERED with new belt buckles are those in Renaissance style, and showing chased heads and scroll-work combined. There are also some very pretty buckles in rococo effects; a buckle of decided merit, from an artistic point of view, is in chased silver, the designs being griffins and acanthus scrolls inclosing an opal in the center.

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AMONG imported clasps and buckles that are attracting attention, are the heavy Norwegian ones with their peculiar designs and styles of finish.

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A FEW of the Easter gift importations are worthy of note, inasmuch as these not only sold well, but are suggestive. The Paris caskets, some of them, come under this head. In one variety, the egg-shaped body of the piece was in gilt open work in Persian characters of finely elaborate ornamentation; this body was supported on gilded claws. Other vase-like receptacles were formed with silver ostrich eggs divided in two sections, which were rimmed with gold; the pieces rested on gold feet and the foliage surrounding the base was of gold.

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SEVERAL patterns recently introduced in flat ware commend themselves. Among these are the designs representing the fruits and flowers with their foliage. There appears a fitness in the appropriation of these subjects for articles to be used on the table. The infinite variety of style and design, however, afforded now-a-days in the decoration of spoons, forks, etc., affords a wide field for selection, and consequently all tastes ought to be satisfied.

THE widespread and constantly increasing patronage of silver plate ware, is an important fact. It proves the wonderful progress made by designers and manufacturers, not only in the producing of pleasing and artistic designs, but the admirable finish now given to the silver plate, along with the all-important feature of its enduring qualities. In consequence of this progress, tasteful and artistic table furnishing have been brought within the easy reach of that all-powerful class of patrons familiarly known as "the popular trade."

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THE writer has been much impressed of late with the admirable effects gained in celluloid handles to knives, carvers, etc. These are now in the market so well made and so delicately finished, as to defy detection from ivory handles by the uninitiated. ELSIE BEE.



[From our Special Correspondent.]

BOSTON, April 15th.

Trade during the past month has been, almost without exception, dull. Ordinarily the New England trade begins to pick up about this time, but a number of causes have combined this season to hinder its improvement. Chief among these was the "great storm." It made travel impossible in all New England for a week, and in Vermont, New Hampshire and Maine, where so much of the trade of the Boston jobbers is concentrated, for yet another week. In these states many roads are still blocked with snow, so that the retailers cannot be convinced that spring has really come.

The increasing in the winter emigration to Florida has not failed to have its effect on the retailers, especially in Boston, and, of course, this re-acts in turn upon the jobbers.

The watch case trouble has not been settled so soon as the friends of the association hoped. In Boston, the rules of the association have been lived up to, though at least one dry goods house has begun selling watches. But it is well known that a few months will see an extensive business of this sort done by one or more of the dry goods houses. For the experience of other cities has shown that when a dry goods house determines to open such a department, the watches are always forthcoming, no matter what rules may be made by the association.

The Boston Jewelers' Club, the preliminary steps toward the formation of which were spoken of in my last letter, is now an actual organization. The idea of forming such a club met with a reception that is surprising, when one takes into consideration the conservatism that is so strong in Boston.

The committee who undertook the formation of the club, Mr. Smith, of Morrill Bros. & Co., Mr. Whitney, of Whitney Bros., and Mr. Richards met with such success that on March 28th, they issued a circular letter, stating that 31 members of the jobbing trade had signified their desire to join, and appointing a meeting on Tuesday, April 3d, at the office of Smith & Patterson, 44 Summer street.

At this meeting the proposed by-laws were discussed, but lack of time prevented a full consideration, and their adoption, together with the election of permanent officers, was postponed until the next meeting. The intention to make the club a success was shared in by everyone. Mr. D. C. Percival, who presided at this meeting, was appointed temporary chairman, and Mr. Smith secretary, to arrange

for the first dinner, which takes place at Youngs', Saturday evening, April 28th.

But one member of the trade has declined to join, and his reason for so doing is that his health would prevent him from attending the dinners; so that every firm is represented.

Palmer, Bachelder & Co., are making but few additions to their picture department, as they lack the room to make it more extensive than at present. But two charming water colors that they have just received among others, are noticeable. They are by Henry Bacon, from his salon pictures of this year, and are entitled "Boat Builders" and "Mending Nets."

H. A. Prentice & Co., have improved the dull season by making arrangements for an extensive business in rings with all varieties of stones. They make a specialty of diamonds, and have an attraction in the form of a 14-k. ring with a genuine diamond for \$5.00. They say that their spring trade is already beginning to improve, in which respect they are an exception.

At the office of Morrill Bros. & Co., your correspondent in answer to a question on the state of trade, was greeted with the answer: "We always have a pretty good business; although, of course it is dull now, we have almost 33 per cent. more than at this time last year, so we are very well satisfied."

Norton Bros. & Butters, are still delayed in moving to Kansas City by the non-completion of the building they are to occupy there. They have given up already nearly all their New England customers, and in a few weeks will probably be comfortably settled in their new quarters. I myself have just returned from a ten days' trip through the west, which presents every evidence of business prosperity. The new home of Norton Bros. will be a magnificent edifice when finished. The jobbers in Kansas City with whom I had a chance to talk all spoke well of the trade, although the universal opinion seems to be that the town has reached and passed the climax of its real estate boom. It doesn't follow that necessarily that trade will follow suit. Indeed there is every reason to believe the contrary.

LEON.

Practical Hints on Optics for Skilled Opticians.

[By C. A. BUCKLIN, A. M., M. D., NEW YORK.]



IN THE April CIRCULAR we considered at length the defects of the ocular muscles which cause the head to assume grotesque positions, and which also cause the various forms of diplopia.

The ocular muscles may be competent to retain both eyes directed at the same object, but from a weakness or insufficiency of a single muscle, great muscular fatigue may result from the efforts made to keep both eyes directed at the same object. This fatigue gives rise to muscular asthenopia, which affection is at the present day receiving unusual attention.

There are two ways of determining the existence of weak muscles. One method depends upon testing the muscular equilibrium in the horizontal and vertical directions.

This is accomplished as follows: To test the vertical equilibrium place a candle at twenty feet in a darkened room; place before one eye a prism, base in, of 10° , or of sufficient strength to produce double vision. Now, if there is vertical equilibrium, the two lights will appear on about the same level, if not, there will be a considerable difference in their respective heights.

To test the horizontal equilibrium, a prism of 5° is placed, base up or down, before one eye; if equilibrium exists the two lights will be seen nearly over each other—if it does not exist there will be considerable lateral displacement of the candles. In making these tests any decided error of refraction should be corrected first.

Graefe used a vertical line with a black dot on it, with which he

made the same tests at the reading or working distance. The prism prescribed for an insufficiency of an ocular muscle, which was demonstrable at twenty feet, represented the full prismatic correction.

When the insufficiency was only demonstrable at the reading distance, one-half of the prismatic correction was given, which half was equally divided between both eyes. Combined with errors of refraction prisms are better tolerated than in emetropia; they are frequently intolerable where considerable muscular weakness exists. If there is above 2° they cause objects to look convex, when the bases are in, and concave, when the bases are out.

Other cases not only tolerate the prisms which correct their weak muscles, but find them grateful.

A second and more searching way of determining the existence of weak muscles is to test the amount of prism which each group of muscles can overcome. In the average individual it will be found that at twenty feet the vertical muscles cannot overcome three degrees of prism, with the base up or down, sufficiently, to avoid double vision. The average external muscles cannot overcome prisms of more than 8° , base in, sufficiently to avoid double vision. The internal muscles overcome from 12° to 40° of prism, base out, without showing double vision.

The first few experiments do not count for much, as the person has not really acquired the muscular facility for overcoming prisms. I should say, as a result of my personal experience, that the various muscles should come up to the above requirements. An ability of the vertical muscles to overcome a prism of 4° or more, base up or down, will indicate that these muscles are the cause of weak vision.

The external muscles may not overcome two degrees of prism, and still no weakness of vision be complained of, but such cases usually tire while observing distant objects, in which case some of the power may be taken away from the interni muscles and added to the externi muscles by placing weak prisms before the eyes, base out, or by doing a careful tenotomy on the interni muscles.

After a week's trial with prisms the internal recti muscles should exceed the external recti muscles in power by at least 4° of prism.

We have a general weakness of ocular muscles which will show an insufficiency of the external muscles for the distance, and an insufficiency of the internal muscles for near vision. These cases are simply discouraging, as nothing which you can do for them relieves their weak vision.

An attempt is now being made to introduce new terms for muscular insufficiencies. The terms are proposed by Dr. Stevens, of this city, who insists that the part played by faulty ocular muscles in causing weak vision is much more general than has before been supposed. The system of defective ocular muscles, as he describes it, is as follows:

The state of physiological equilibrium is called *Orthophoria*.

Any disturbance of physiological equilibrium is called *Heterphoria*.

Heterphoria is divided into

1. *Esophoria*, a tendency of the visual lines inward.
2. *Exophoria*, a tendency of the visual lines outward.
3. *Hyperphoria* (*Right* or *Left*), a tending of the right or left visual line in a direction above its fellow.

Compound terms expressing a complication of tendency of one of the visual lines may be expressed as hyper-esophoria, a tending upwards and inwards, or hyper-ex-ophoria, a tending upward and outward, the designation, right or left, being always applied to these terms. For example, if it is desired to indicate that the right visual line tends above its fellow 3° , and there is a tendency inward of 4° , then the upper and outer muscle being weak, it is expressed as follows: $3^\circ \text{ L } 4^\circ$. In determining the tendency of the visual lines to deviate, he uses the method given above of testing the muscular equilibrium.

A prism is placed before right eye, base in, sufficiently strong to produce double vision, and the two images are seen on the same horizontal plane. No deviating tendency in the vertical direction is

manifest. If one of the images rise higher than the other, hyperphoria is present. If the right image appears lower than the left, there is a tendency of the right visual line to rise above the left. This is called right hyperphoria.

When the left image is seen below, this is called left hyperphoria.

The degree of prism placed with its base down before the right eye, or base up, before the left eye, which is necessary to bring the images to the same level, measures the degree of hyperphoria.

To test for esophoria and exophoria, a prism of 7° is placed before the eye, base up or down. If, after a moment, there is no deviating tendency, the two lights will be seen at 20 feet, exactly over each other.

If there is a horizontal deviation, and the light seen with the right eye is to the right, esophoria exists. If the light seen with the right eye is seen to the left, the tendency of the eyes is outward, and exophoria exists.

The degree of prism, base in or out, necessary to bring the two lights into a vertical line, represents the degree of exophoria.

It is plain to see that while one test demonstrates hyperphoria to exist, the second test may demonstrate that esophoria or exophoria also complicates the hyperphoria. When hyperphoria appears by the above tests it is said to be manifest. It may exist and not appear at once by this test when it is said to be latent. Great care and many observations are necessary to decide in obscure cases the true conditions of the ocular muscles.

Having determined the tendency of the ocular muscles, it is advised to test their strength by the degree of prism they can overcome when observing a candle at 20 feet. This method I have already described as one of the methods of determining the existence of a weak muscle.

The base of the prism is always turned away from the muscle the strength of which is to be tested.

In our next we will have a special article on Hyperphoria, or Vertical Deviations of the Visual Lines.

(Letter No. 1.)

NEW YORK, April 14, 1888.

DR. BUCKLIN,

Dear Sir:—A correspondent asks the following question. Will you kindly answer it?

"Where can I get the best and most practical book on the science of fitting the eyes with glasses. I want a book that will give me all the information in regard to different cases, and a book of reference."

Yours, etc.,

F. B.

I know of no book which fully meets the requirements of an optician. "Refraction and Accommodation of the Eye," by Donders, is the best book in the English language. Those who read German will find "*Optische Fehler des Auges*" by Ludwig Mauthner, of Vienna, a valuable book.

(Letter No. 2.)

MALONE, N. Y.

DR. BUCKLIN:

I have a case of astigmatism in which I find a little peculiarity. It is as follows:

R. V. $20/30$ with $-1/24$ cy/ax 150° V. $= 20/20$.

L. V. $20/30$ with $-1/24$ cy/ax 30° V. $= 20/20$.

The peculiarity is this: without the above correction, looking at the No. 30 letters at 20 feet distance with *one* eye each letter is seen *double*, and with nearly equal distinctness. With the right eye the

letter **F** appears thus, **F**. What puzzles me is, how with *one* eye only there will be double vision.

I would be much pleased to have you give me information on this case, as soon as convenient.

I am doing *splendidly* with my optical work and it keeps increasing all the time.

The above described case is unique and interesting. The peculiarity is due to an irregularity in the lens, the nature of which any-

one can comprehend, by looking with one eye just over the base of a prism, so that you receive in one eye rays of light which come direct from the object as well as those which come from the object through the prism. You will immediately be able to see double with one eye.

The School of Optics for the education of those desiring to become skilled opticians is flourishing.

Two more classes will probably form this season, one for May and one for June. Those desiring to join either of these classes should apply early, as great difficulty is found in arranging a time for meeting which is mutually satisfactory.



[From our Special Correspondent.]

LONDON, April 8, 1888.

There is no longer any reason to doubt that the prospects of the jewelry trade of the United Kingdom are brighter than for some time heretofore. The home trade has greatly improved in many branches and is still improving. There are unmistakeable indications that the present season will be a prosperous one. There are few industries that are so directly affected by the general trade of the country as ours, and I base my strong belief in the advent of a prosperous season for the jewelry trade upon the steady improvement in trade generally. The returns of our Board of Trade for the month of February are very encouraging—more so than those for the month of January. There was a considerable increase in both our imports and exports for that month, and in due time our manufacturing and retailing jewelers will be called upon to exchange their newest productions for some portion of the profits thus created. I have heard from various quarters that export orders have been plentiful lately, and that enquiries in this important branch are just now more encouraging than they have been for the past few years. It would be useless to shut our eyes to the fact that there has been a great deal of unhealthy trading all round. The records of recent proceedings in bankruptcy are discreditable to the trade and would be so to any trade. Good traders can do much to make good trade, and of the failures which have done so much mischief lately, the majority must be attributed either to great ignorance or the wilful disregard of those principles which should regulate all trade. Some manufacturers have been fairly busy throughout the depression, but from causes beyond their control, their profits have been small.

I am strongly of opinion that one serious detriment to the general prosperity of our trade has been the great increase in the number of manufacturers during the past few years. Hard working, intelligent, trustworthy men, having saved a little money in the service of employers who have appreciated and remunerated their services, have been seized with the ambition to become manufacturers themselves. Their capital being insufficient even for a small commencement, they have obtained loans from relatives and friends, and only learn the fact that good servants do not necessarily make successful masters, by the loss of their own and their borrowed capital. I should much like to know what the experience is in your country; but in almost every trade here I find the same fruitful source of evil—needless and unhealthy competition created by competent representatives, travellers and journeymen, descending to the level of incompetent employers. A number of such manufacturers have "gone to the wall" during the last year or two, and trade will be all the better for

their absence from it. It is to be desired that their fate will act as a deterrent to others.

A new departure has recently been made by some of our larger manufacturers who, have arranged to do their own gilding and plating. I cannot blame them for making the experiment—it must be a convenience to have, as far as possible, every detail of the work completed within the factory, but if the practice becomes general, it will greatly interfere with the occupation of the gilders and platers to the trade. I do not think the present electro-depositors need fear more than a temporary competition. It is almost a necessity that their business should remain a separate branch of the jewelry trade.

There is still a good business done in sterling silver—but in small and light articles only—the heavier silver goods are not at all in request just now. There is also a considerable improvement in the export of silverwares. “Combination” articles are, as a rule, to be commended more for the ingenuity displayed in their construction than for anything else. A particular exception to this rule, however, is a novel combination for the breakfast table. The receptacle itself takes various shapes—sometimes that of a bird's nest, at others, that of a wicker basket, and again, that of a shell. Fitted in it are to be found a silver coffee pot, cream jug and sugar bowl and a small cruet frame. There are cups, saucers, plates and dishes of wedgwood and other wares. Toast racks are attached to the sides, and a small butter cooler is suspended on a silver frond away from the hot coffee pot. There is an air of compactness and utility about the whole that is attractive.

Narrow gold bracelets (about half an inch wide) are more in vogue for evening wear. Plain, flat and round are sold, but the demand is principally for finely filigreed, sometimes set with stones and sometimes all gold.

The variety of novelties in the stud trade is at once astonishing and interesting. There is a constant succession of applications for patents applicable to these goods. Double links are just now in great favor, while solitaires are passed by purchasers. Yet in solitaires, patentees continue to exercise their ingenuity and to spend their money in formulating and then protecting fresh arrangements. An invention for the use of smokers is a pair of links, formed of a small gold pipe on one side and a little gold cigar on the other.

The celebration of the silver wedding of the Prince of Wales had some effect on the jewelry and fancy trades. The corporation of the city of London resolved to present their Royal Highnesses with a commemorative present, and competitive designs and models were asked for. These were submitted to the authorities, and the design by Elkington & Co., limited, was accepted. They have received instructions to manufacture in silver a model of the proposed Imperial Institute. It is to cost five hundred guineas, and is to be ready for presentation at an early day. Mr. Masters, jeweler, of Rye, has produced some specialties which he calls “silver wedding jewelry.” The designs are original, amongst them being combinations of the emblems rose, shamrock, thistle and Prince of Wales feathers, surmounted by appropriate mottos. His “royal silver wedding brooch” and bracelet are likely to become popular by reason of their moderate price. The center of the brooch is formed by the Prince of Wales feathers, around which is a band with the words “Fear God, Honor the King,” in old English lettering and spelling. The figures 1863 are on the left and 1888 on the right hand side. Mr. Masters has also designed a “leap year brooch,” made in gold and silver, plain and set with pearls. The brooch consists of the four figures 1888 fixed on three horizontal bars, the center being the longest one.

I have just seen a watch chain that can be used as a penholder and inkstand. The chain is quite flexible, but the tubes composing it are made to fit into each other after the manner of and quite as easily as the sections of a fishing rod. A charm is suspended at the end, and contains an ink bottle securely stoppered. This useful combination is made in gold, silver and nickel.

The Jewelers' and Silversmiths' Association (Birmingham) are

making good efforts to promote the future prosperity of the trade they represent. A very important meeting was held recently under the auspices of the association, at which the duty on gold and silver—the licenses to sell plate and the hall marking of goods were fully discussed. The whole trade is indebted to the Birmingham association for drawing the attention of the authorities to these restrictions to business from which we have suffered so long. VIGILANT.

BIRMINGHAM, April 11th, 1888.

[From our Special Correspondent.]

During the recent very bad weather we have had there has been a great deal of complaining among the dealers about the smallness of sales caused by the weather, but as far as I can learn, this has not been altogether genuine, as the dealers have, on the whole, bought quite as much since Easter as is their custom at this time of year. Should the complaints of factors be genuine the manufacturers certainly have nothing to complain of, as the orders from Australia are larger every mail, and on calling on a merchant to-day I was much surprised to find that he had some large orders of jewelry for your markets.

As the time for the various exhibitions draws near makers of cheap jewelry and fancy goods are getting ready to sell all the goods possible at these. The stall is of course not taken by the manufacturer but by some customer who relies on a few manufacturers supplying them with any class of goods or designs he may suggest. At Glasgow Exhibition there is to be an Irish section, and several Dublin shopkeepers intend taking advantage of the present political agitation in Ireland, by selling at their stalls “Real Irish Jewelry,” the greater part of which will consist of Connemara marble and bog oak found in Ireland, both of which will be cut and mounted in Birmingham.

English enamelers have for many years been endeavoring to equal the best work of French enamelers, but have hitherto had to give the palm to the latter nation. But we have now several enamelers in the town who can quite equal the best work turned out of France. At present this is principally confined to cigar and cigarette cases in gold and silver, but no doubt before long it will become general in all the best class of jewelry. The beauty of some of the subjects is beyond description. They include copies of some of the best pictures, specially figure subjects. In these some of the flesh tints are really exquisite.

It is to be hoped that the taste for this high class work will spread, and we shall see no more of the wretched stuff that has been done.

The advent of Primrose day has brought in the usual rush of designs, in which the Primrose is the leading ornament from the common brooch in metal up to some first-rate enamels. Some of the latter representing a brooch of Primroses lying in a leaf are not only exceedingly tasty and pretty, especially in the coloring in the enamel, but also very beautiful in design and suitable for wearing at any time.

In visiting a clock factory, a few days since, I was very much interested in an eight-day clock, very appropriately called the “Dot.” This was made on what is known here as the American principle that is, shape of a Seth Thomas clock, but this only measured three inches across, and yet went for eight days and kept good time, as I found by one which I brought away with me to test.

Now summer is coming. The run on mosaic jewelry has again begun. This very pretty class of work is now to be seen on some cards which are quite new to the jewelry trade. They are made in gelatine with the surface deadened, so as to make it almost opaque. In addition to the brooches seen last year this mosaic jewelry is now to be had in earrings, solitaires, scarf pins, necklets, bracelets, clocks, and many other useful articles.

For many years past, until recently, the manufacture of jewelry in London has been very small, but during the last few years it has increased very rapidly and this Easter the manufacturers have not

been content to remain in their own city but several have come down here, looking up the dealers and competing with local makers in what has hitherto been considered their own preserves.

Birmingham manufacturers evidently do not intend to allow themselves to be beaten anywhere, as several have made up special patterns in mourning jewelry to send to Germany, to endeavor to wrest some of the trade out of the hands of German makers. As the cornflower was the favorite flower of the late emperor of Germany, most of the patterns have this worked into the design in one form or another, and in every case possible, a box has been inserted to take the portrait of his late majesty.

SOLITAIRE.

Insufficient Capital.



OUR London correspondent, in his letter printed in this issue, gives voice to a complaint heard in trade circles there, which is by no means confined to England. That is the large numbers of dealers who are doing business, or attempting to do so, on insufficient capital. Young men who have learned the business, or think they have, become ambitious to set up for themselves, and, having made an acquaintance with manufacturers or jobbers especially with this end in view, obtain goods entirely on credit and boldly launch forth upon the tide of business. They have but little knowledge of men or their manner of doing business, and because of their ignorance, they soon come to grief, involving others in the disaster. It can be said with much truth, that a good workman is seldom a good merchant; it is no discredit to him to say this, for his education has been in directions entirely different from those of commerce—he has been trained to make goods for others to sell, not to sell them himself. He has not been in the way of learning the methods that characterize mercantile transactions, and especially those of the successful financier, to enable him to look ahead and provide in time for obligations that are to mature. But his greatest weakness lies in not being familiar with the public taste, and consequently he buys indiscriminately and even recklessly. Starting out with the best intentions in the world, and with a laudable ambition, he is handicapped from the first by the fact he is in debt for all his goods, and must sell them at a price that will not only enable him to pay for them, but to meet his living and business expenses; the sales must be made, too, within a time that will permit him to meet his obligations. Having no capital of his own to carry him over what may be termed the period of incubation, he comes to grief before the much counted on chickens have even pipped the shell. There have been hundreds of just such cases in this country, and they are cropping up all the time. Those who encourage them by giving them credit are greatly to blame for the disaster that follows. It is certainly a highly creditable ambition that impels a man to go into business for himself, and should be stimulated under proper conditions, but the man who loads himself down with debt for the purpose of doing so is so overweighted at the start, that he is not like y to make much of a record in the running. The man, however, having some capital of his own which he is willing to invest to back himself, thereby showing his own confidence in his capacity, is entitled to be encouraged by the creditor class to an extent equal to his own risk. When credit is extended in a promiscuous and uninquiring manner, it is placing temptation in the way of men who, because of their unfamiliarity with business methods, may be impelled to yield at the first symptom of coming trouble, and to become dishonest through force of circumstances they have not been trained to meet rather than from any premeditated design. There have been many noble exceptions to the general rule, and some of the most prosperous and respected members of the jewelry trade have come up from the bench, but they have almost invariably had a supplementary education in the counting house, or on the road as salesmen, whereby

they have learned the commercial requirements of the business in addition to their knowledge of its mechanical demands. Yet where one of even these favored ones has been successful, a hundred others have fallen by the wayside. In these days of excessive competition, the profits derived from the business are not so great or so well assured as to offer very great temptations to those who have good salaries to engage in it. The story is told of a gentleman who had long been a salesman for a Maiden Lane house that when he was offered a junior partnership in the firm, he declined, saying: "If you find it necessary to reduce my salary why, do it, but don't beat around the bush by making me a partner." He evidently knew what he was talking about. There is an old saying to the effect that fools rush in where angels fear to tread, and so we find these ambitious persons venturing without capital into the stream where experienced men, with reputations and an abundance of capital, find it difficult to make headway.



[From our Special Correspondent.]

News was a scarce commodity around Chicago last month, no less for the daily press than for the trade paper. True, we had for a week or two the big railroad strike in which a number of other railroads besides the "Q" figured, but the whole business ignominiously collapsed and the strikers met with an absolute discomfiture. The effect on trade—jewelry and others alike—has been reassuring, and men who commenced the month with somewhat downcast hearts, are, at the end of April, feeling more encouraged than they have been since the beginning of the year. Collections are fairly good, money is moderately easy, and prospects, gauged by the order trade and that reported by travelers, are flattering. Business during the early days of the month was unquestionably a little dull, but the reasons therefor have been amply explained.

The prospects for a good spring trade are, at the present time, entirely assuring, and all jobbers are at least feeling comfortable, if not "good."

Mr. C. K. Giles has been a very busy man during the third week of April. As Inspector of Time for the Northwestern Railroad, its connections and various other roads, he has been in consultation with his examiners, sub-inspectors, etc., and the result of the conference was to demonstrate that the new system was being approved more and more by the employees themselves, and a happier and more secure era of railroad travel was dawning on the country. The service is approving itself no less to the roads than to the public at large, and doubtless ere long not a responsible road in America will be without a rigid inspection of the time carried by its employees, which does so much to insure freedom from collision and other railroad casualties. Mr. Giles reports good business in his house for the month of April, and anticipates a fair spring trade.

Stein & Ellbogen, in their elegant re-modeled premises described in last month's issue of THE CIRCULAR, continue to do the solid, conservative business that has given them such an excellent reputation in the trade. They are fast taking their place among the very leading jewelers and diamond merchants in the city.

Mr. L. S. Grout, manager of the Excelsior Sign Co., still reports business "booming." Overcoming all the difficulties of navigation, his "Father Time" has taken wings far across the ocean, away beyond King Kalakaua's kingdom, where he has repeatedly alighted, and drawn in his wearied pinions over the door of the court jeweler

of the chief mandarin of the Emperor of China, in the pre-historic and populous city of Peking.

Samuel Swartchild & Co. are now established in commodious quarters at 76 and 78 State street, and it is hoped that with the change of location there is success and prosperity for this pushing young firm. The Weber Co. and Mr. G. H. Loehr are also established in the same building.

J. H. Logue & Co. have moved to 102 Washington street.

M. A. Meade & Co., agents for American watches, have moved to more commodious premises, in Room 5 in the same building in which they have done successful business for years.

Mr. John M. Cutter, the genial general agent of the Elgin National Watch Company, who spent the second week of April in New York, returned home on April 17.

Mr. Edward Forman, the receiver for N. Matson & Co., makes a very favorable report on business during the last month.

H. F. Hahn & Co., report business in an exceedingly healthy condition, and claim to be doing quite as much business as last year. All their men on the road are reporting encouraging sales.

A. Hirsch & Co. report excellent business in their material department, and say that the other branches of their business are in a correspondingly brisk condition.

Mayo's jewelry store in the Palmer House block, near the corner of State and Monroe streets, has been thronged with crowds for the last week or two gazing at two immense pairs of antlers, gilded and set in a silver plate nearly 3 inches wide and 4 inches long, attached to a piece of hard finished oak. The antlers in question were mounted for an eccentric old Arizona miner named A. W. Callen. Mr. Callen has a mania for having jewelry of unique patterns manufactured for himself in the shape of antlers, paper weights, watch cases, chains and other ornamental and useful articles. It is told that Mr. Callen had a lady's watch case made of a cluster of nuggets set with rubies, sapphires and diamonds. Mr. Callen is eccentric in dress as well as tastes. On a recent visit to the city he appeared in a massive pair of leggings, with a blue plush coat adorned with brass buttons.

Adolph Engel, a German jeweler, 35 years of age, committed suicide on April 7th, by cutting his throat with a razor at his home 271 North Wells street. The deceased leaves five children. No reason is assigned for the suicide.

Arthur T. Evans, a well known salesman with Jerome B. Chambers & Co., and one of the most popular young men in the local trade has been compelled to go south in search of health. Mr. Evans contracted a severe cold at the end of March, and was advised by his physician to seek a warmer climate. Mr. Evans has the best wishes for his speedy recovery of a large circle of Chicago friends.

The executive committee of the United States Jewelers' Guild will meet at the Saratoga Hotel, Chicago, on May 9, when, it is understood, important business involving the constitution of the Guild as now existing, will be considered.

The Retail Jewelers' Association of Ohio, met in Columbus, O., on April 25 and 26. Mr. John C. Dueber talked to the members, and addresses on various interesting trade subjects were made by J. H. Purdy, Dr. Julius King, W. W. Bostwick and others.

Omaha has now a first-class wholesale house doing business in tools, materials, and optical goods, in the shape of the splendid new establishment recently opened by Sol. Bergman & Co. The new firm is credited with having one of the largest and finest stocks in the entire west, and proposes to make the branch referred to its distinct specialty.

Mr. Callius T. Huntington, formerly of St. Albans, Vt., has been engaged by the Holmes & Edwards Silver Co., as city salesman for Chicago.

Mr. C. H. Knights arrived home from his sojourn in California early

last month looking vastly improved physically, and feeling in excellent spirits.. Mr. Knights anticipates this year a still more phenomenal increase in his rapidly rising business.

Mr. J. D. Fox, of Emporia, Kans., one of the best known citizens and jewelers of his town, died on April 16, in the 43d year of his age. Mr. Fox, for many years, had been one of the most philanthropic and public-spirited men of Emporia, and his loss is keenly felt by a large circle of friends, as well as the public at large. He was the brother of H. E. Fox, favorably known as the Secretary of the U. S. Jewelers' Guild.

Mr. J. R. Hursh, Hastings, Neb., has quit the jewelry business.

Mr. T. B. Rice, Rosendale, Wis., has moved to Oakfield.

M. Parse & Co., have succeeded Mrs. M. Parse, of Pine Bluff, Ark.

Mr. E. B. Wallace succeeds Mr. R. C. Wallace, at Newport, Ark.

Taylor & Harsley, Hastings, Minn., succeed Meyers & John, of the same place.

Mr. W. M. Rutledge, formerly of Sulphur Springs, Tex., has moved to Mount Pleasant.

Mr. A. Anderson, formerly of Beatrice, Neb., has found a more eligible business location at 2412 Cuming st., Omaha.

Mr. H. N. Knights, once well known at Monticello, Ill., is now in business at 1019 West Chicago ave., Wichita, Kas.

W. Karll, Ladonia, Tex.; E. A. Bazzett, Hillsdale, Mich.; C. Schobert, Farmington, Ia.; J. M. Fulgham, McKenzie, Tenn.; and C. D. Gunn, Shubata, Miss., have gone out of business.

Mr. H. C. Karfbage, of Racine, Wis., has succeeded Mr. J. W. Watts, of the same place.

Gowdy Bros., of Enfield, Ill., have sold out to Mr. J. F. Gowdy.

Mr. J. W. Jones, succeeds Mr. W. J. Schraeder, at Harrisburgh, Ill.

Mr. C. W. L. Trotnow, wife and family, of Le Mars, Ia., passed through Chicago in the middle of last month to visit friends at Franklin Grove, Ill.

Mr. H. F. Higbee, of Ashland, Wis., is at Hot Springs, Ark., trying to recuperate from a severe attack of rheumatism.

The Illinois Watch Factory operatives have just organized a mutual aid society with the following officers: A. E. Bently, president; Ed. Chambers, vice-president; George B. Bates, Treasurer; J. R. McCrea, secretary.

Among the arrivals in Chicago during the month have been: D. F. Sullivan, Rockford, Ill.; J. C. Peers, Rockford, Ill.; L. D. Jones, Laporte, Ind.; William H. Beck, Sioux City, Ia.; E. B. Woodward, Morris, Minn.; George Sites, Fowler, Ind.; J. T. Walker, Sandwich, Ill.; Joseph Heers, Rockford, Ill.; Ozias Reilly, Champaign, Ill.; J. R. Parsons, La Porte, Ind.; A. J. Pratt, Oneida, Ill.

Among the deaths of western jewelers reported during the month are those of Fred. St. Julien, Mt. Sterling, Ky,

The "Atlanta Cup."

A PRIZE OFFERED BY JAY GOULD TO THE FASTEST STEAM YACHT.

A great part of the interest which is manifested in sports of all kinds at the present day, is that shown by the lovers of yachts and yachting.

During the past few years in this branch of sport, great progress has been made through the stimulus of the great international races, in which the American yachts have repeatedly been victorious. Improvements have also been made in the proportions of the yachts, so that yachtsmen have been compelled to build new and faster boats each year in order to meet their rivals who had done likewise.

Steam yachting, however, is almost a new feature of this sport, for during the late development of interest in sloop and schooner racing,

wealthy persons who did not care to risk themselves in craft which were built mainly for racing and not for comfort, wanted boats for pleasure solely. Hence at the present time there are many steam yachts afloat in our waters that surpass in all the luxuries and comforts of decorations and conveniences many of the finest residences on land. Many steam yachts are also in process of building, so that the coming summer will find more of these craft than were ever before to be seen.

In steam yachts also, a feature of their building has been to make them fast sailers as well as commodious and elegant, and their wealthy owners will not be satisfied until each has fully tested the speed of his boat. During the latter part of last summer, Mr. Jay Gould ordered of the Gorham Manufacturing Company a cup, to be made as a prize for the fastest steam yacht. The accompanying illustration shows the obverse side of the cup. It is the largest ever made by this house, standing thirty-seven inches from the top of the large ebony base. The work is elegant, and the design artistic. On the reverse side of the cup is the following inscription beautifully etched: "Atlanta cup, presented by Mr. Jay Gould, to the steam yacht making the fastest time over the American Yacht Club course, for three successive years without time allowance." Around the ebony base is a series of blank shields on which may be engraved the names of the successive owners of the cup, and the circumstances of each race.

The Atlanta cup is a piece of work in which all who were concerned in its conception and manufacture may well take pride. The Gorham Company certainly have scored another mark to their reputation as artistic workers in silver, and Mr. Jay Gould appears to advantage among the patrons of arts.

The Jewelers' Security Alliance.

President, DAVID C. DODD, JR.

First Vice-President, AUGUSTUS K. SLOAN.....Of Carter, Sloan & Co.

Second Vice-President, HENRY HAYES.....Of Wheeler, Parsons & Hayes.

Third Vice-President, DAVID UNTERMAYER.....Of Keller & Untermeyer.

Treasurer, W. C. KIMBALL.....Of Strange & Brother.

Secretary, C. C. CHAMPENOIS.....Of Champenois & Co.

EXECUTIVE COMMITTEE.

J. B. BOWDEN, *Chairman*.....Of J. B. Bowden & Co.

C. G. ALFORD.....Of C. G. Alford & Co.

GEO. W. PARKS.....With Howard & Son.

F. KROEBER.....Of F. Kroeber Clock Co.

N. H. WHITE.....Of N. H. White.

CHAS. G. LEWIS.....Of Randel, Baremore & Billings.

EXAMINING FINANCE COMMITTEE.

GEO. H. HODENPYL.....Of Hodenpyl & Sons.

CHAS. F. WOOD.....Of Chas. F. Wood.

For further information, Application Blanks for Membership, By-Laws, etc., Address
P. O. Box 3277. 170 Broadway, New York.

A special meeting of the Executive Committee was held at the Alliance office, Tuesday, the 27th inst. The following were admitted to membership:

Henry W. Curtis, 137 Gay street, Knoxville, Tenn.; R. S. Eldridge, 270 Main street, Hartford, Conn.; S. F. Gordon, 210 Texas street, Shreveport, La.; Hamilton & Merriam, Front street, Fremont, Ohio; E. E. Kanf, 15 E. Fourth street, Wilmington, Del.; Hancock, Becker & Co., 40 Clifford street, Providence, R. I.; Joseph Jerger, 10 Broad street, Thomasville, Ga.; S. Kind & Co., 441-443 Market street, Philadelphia, Pa.; Klein & Fink, 701 Garrison avenue, Fort Smith, Ark.; Leonard Krower & Co., 8 St. Charles street, New Orleans, La.; Kiefer & Deschamps, 926 Chestnut street, Philadelphia, Pa.; Theodore Knoop, 97 Remsen street, Cohoes, N. Y.; A. F. Pickert, 5 Whitehall street, Atlanta, Ga.; Pachtmann & Moelich, 363 Canal street, N. Y.; C. F. Rudolph, N. W. cor. Market and Fourth streets; C. V. Seutter, 100 cor. State and Capitol streets, Jackson, Miss.; Fred. J. Stilson, 55 Whitehall street, Atlanta, Ga.; Chas. Stakeman, 23 E. State street, Trenton, N. J.; Albert Vogt,

Montgomery City, Mo.; A. A. Webster & Co., 241 Fulton street, Brooklyn, N. Y.; Edgar A. Walker, 270 Main street, Poughkeepsie, N. Y.; Jos. E. Wells, Jr., 308 Second street, Macon, Ga.; The Middletown Plate Co., 25 to 35 Hubbard street, Middletown, Conn.; Curtis J. Monson & Son, 760 Chapel street, New Haven, Conn.; Max Meyer & Bro., cor. 16th and Farnam streets, Omaha, Neb.; A. M. Meyer & Brother, 523 Broad street, Richmond, Va.; H. M. Mather, 12 W. Main street, Meriden, Conn.; Moore & Leding, 1,109 Pennsylvania avenue, Washington, D. C.; T. C. Spencer, 49 Railroad street, St. Johnsbury, Vt.; Wm H. Heathcote, 38 Park Row, Potter Building, N. Y. City.

Also March 22, Clarence H. Rudolph, 10 S. Erie street, Massillon, Ohio.

At a special meeting of the Executive Committee, held at the Alliance office on the 30th inst., the following were admitted to membership:

Bitterman Bros., cor. 2d and Main streets, Evansville, Ind.; Chas. B. Bushman, 76 E. Seneca street, Buffalo, N. Y.; Geo. Honnet, 121 Market street, Wilmington, N. C.; Paul Jeanne, 8 Maiden Lane, City; H. E. Kleinlein, Main street, Upper Sandusky, Ohio; A. New-salt, 420 Fifth street, Dayton, Ohio.

Also on the 29th, Max Goldsmith, 917 Pennsylvania avenue, Washington, D. C.

At the regular monthly meeting of the Executive Committee, held at the Alliance office on the 13th inst., there were present Vice-President Hayes, J. B. Bowden, Chairman, W. C. Kimball, Treasurer, Messrs. White and Kroeber, and C. C. Champenois, Secretary.

The following were admitted to membership:

Bunde & Upmeyer, 121 and 123 Wisconsin street, Milwaukee, Wis.; George M. Bailey, Main street, Uniontown, Pa.; August Bruder, 98 Calhoun street, Fort Wayne, Ind.; Chas. E. Cragg, Broad street, Port Henry, N. Y.; J. J. Freeman, 313 Summit street, Toledo, Ohio; Louis Gutman, 51 W. 4th street, Room 9, Cincinnati, Ohio; C. F. Gray, 2 East Main street, Jamestown, Ohio; John I. Holt, 75 North Main street, Paterson, N. J.; Adelbert Kaempper, 154 W. Madison street, Chicago, Ill.; Lord & Lowell, Waterstreet, Augusta, Me.; Nordahl & Olson, 213 Milwaukee Ave., Chicago, Ill.; J. Rath & Bro., 225 E. Main street, Jackson, Mich.; F. H. Schultz, 172 1/2 Canal street, N. Y. City; Steinicke & Hammer, 102 Broadway, Brooklyn, N. Y.; J. W. Young, 155 Sycamore street, Petersburg, Va.; The Cowell & Hubbard Co., 177 and 179 Superior street, Cleveland, Ohio; The Crescent Watch Club Co., 76 Montgomery street, Jersey City, N. J.; The Dueber Watch Case Mfg. Co., 9 Tribune Building, Chicago, Ill.



[From our Special Correspondent.]

CLEVELAND, OHIO.

Of all the western cities Cleveland ranks among the first as regards its population, its industries and its wealth. From a population of 92,000 in 1870, it has increased to a population of 239,000 in 1887, and its wealth and industries have increased in about the same ratio. I cannot say as much regarding the jewelry business, as there are many other cities not as large that can boast of a greater number of larger stocks than are carried in Cleveland. It is a large railroad center and one of the principal ports on Lake Erie. Its real estate is on the boom and its manufacturing interests are large. It has as



✻ THE "ATLANTA" CUP. ✻

PRESENTED BY MR. JAY GOULD TO THE FASTEST STEAM YACHT.



many, if not more, wealthy residents than any city of its size in the West.

The leading and by far the largest jewelry house in the city is the Cowell & Hubbard jewelry Co., Nos. 177 and 179 Superior street. They have a very handsome store, 38 feet front by 100 feet deep, finished in black walnut and beautifully decorated. This concern is managed by Messrs. S. H. Cowell and A. T. Hubbard, both men of over 20 years' experience in the city of Cleveland, and men of excellent taste and judgment. They are represented abroad every year, and are direct importers of diamonds and fancy goods. Mr. S. H. Cowell, who for some months past has been in quite poor health, sailed for Europe on the 11th of April for Carlsbad, where he is to take a course of treatment at the springs for about four weeks, and after two weeks spent in the mountains he hopes to be able to attend to the European business of this house with renewed vigor. This course was advised by a very noted physician of Cleveland, Dr. Weber. Their stock is well supplied with all the novelties in the different departments, and their success is owing greatly to the able assistants they have been so fortunate in associating with them. Mr. Frank J. Patten, Mr. Fred. L. Halidy and Mr. Fred. Van Buskirk are all stockholders in this concern, each having had more than 18 years' experience. They also have a very complete optical department connected with this establishment, presided over by two of the best opticians in the country, Mr. D. D. Clark and Mr. Henry Jordan.

Next to the Cowell & Hubbard Jewelry Co. come P. L. Miles & Co., No. 9 Euclid avenue. Mr. Miles came to Cleveland about 12 years ago, and began to manufacture special designs in diamond mountings, Masonic and all kinds of society badges, and did a very successful business. About five years ago he associated with him the Uhl Bros., Mr. Chas. F. and Louis. They fitted up a handsome store in cherry and stocked it in a very thorough manner. They have done their share of the trade since then. Mr. Miles being a practical man, he has had full charge of the manufacturing department and employs about 16 men. There is some talk now about the Uhl Brothers retiring from this firm; if they do, Mr. Miles will continue the business at the old stand, ably assisted by Mr. Sylvester Hogan, who has had long experience in this business in Cleveland.

Mr. Webb C. Ball came to Cleveland about 9 years ago from Cincinnati, where he had been connected for a number of years with the Dueber Watch Case Manufacturing Co., and established the jewelry house of Webb C. Ball, 233 Superior street, corner of Seneca. He has a bright store, 20 feet front by 75 feet deep, finished in black walnut. He has a fair stock of goods, is agent for Cleveland for the sale of the Vacheron & Constantin watch, and is also the authorized examiner of the employees' watches of all the railroads centering in Cleveland. He employs 4 watchmakers, and Ball's time to the people of Cleveland is the same as Benedict's time is to the New Yorker.

The firm of Welf Bros., 252 Superior street and 342 Ontario street, is composed of Mr. Henry W. and Joseph W. Welf, who have been in the wholesale and retail business in Cleveland since 1865. They have two pretty stores and are doing a very satisfactory business.

Brunner Bros., 255 Superior street. The members of this firm are Mr. A. H. Brunner and Mr. L. H. Brunner. They have one-half of the store No. 255 Superior street, which is about 20 feet front and 62 feet deep. They have had about 20 years' experience, and make a speciality of manufacturing badges—Masonic, Elk and society badges of all kinds. Their business has increased so much in the last few years that they are compelled to occupy the whole store. So after May 1, 1888, they will have a handsome store well stocked with all the novelties in their lines. They sell the Howard watch for their fine watch.

Sigler Bros., 209 and 211 Superior street, are large manufacturers and jobbers, who employ 4 travelers who cover all the territory between here and Colorado. They manufacture a large line of

Masonic emblems and diamond mountings and import direct. They carry at all times a large stock of watches, diamonds, jewelry, silver and plated ware, clocks, bronzes and brass goods. L. M. and U. R. Sigler are the members of the firm, and they employ about 25 men in their factory.

J. M. Chandler & Co., 185 Superior street, have been in business here for the past ten years. Previous to that they were in the business at Fredonia, N. Y. They have a large, well-lighted store, 25 by 180 feet, and well stocked with watches, diamonds, jewelry, silver and plated ware, French and American clocks and bronzes. They report a very satisfactory business for 1887. They employ two travelers, whose territory is West and Northwest. They are making a special drive with the celebrated Geneva non-magnetic watches, containing Paillard's patent non-magnetic hair spring, and are meeting with great success.

HARD SOLDER.



* A Complete History of Watch and Clock Making in America.

[By CHAS. S. CROSSMAN.]

Number Twenty-three.

Continued from page 48, April, 1888.

THE J. P. STEVENS WATCH COMPANY.



HIS COMPANY was brought into existence through the enterprise of Mr. J. P. Stevens, of the firm of J. P. Stevens & Co., jewelers, of Atlanta, Ga. In the summer of 1881 Mr. Stevens invented what was known as Stevens' patent regulator, upon which he received a patent September 19 following. Soon after he put into execution a plan which he had been contemplating for some two years previous, viz., to purchase watch materials 'in the grey' and finish up the movements in Atlanta. Accordingly he purchased of the Springfield, Mass., Watch Co. several thousand dollars' worth of unfinished 18 size movements, and put four men to work finishing them; adding, of course, his patent regulator, and making such

other improvements as suggested themselves and were practical.

This regulator, which was always made a prominent feature of the Stevens watch, may be described as a simple disc attached to the plate, and into which an eccentric groove was cut for the arm of the regulator to move in.

The regulator is, of course, moved a very small amount by turning the disc either way. These watches met with such ready sale that the firm went more extensively into the business, buying more movements, employing more men and adding steam power and a little machinery to their manufacturing facilities. In June, 1882, Mr. Stevens decided to buy the Bowman watch machinery (the history of which has been given), add more to it, build a small factory and manufacture watches in Atlanta. In three days' time he organized the J. P.

Stevens Watch Company; this was entirely separate from the jewelry house of which he was the head, and was composed of the following named gentlemen: Messrs. J. P. Stevens, J. H. Porter, J. C. Freeman, Sr., L. O. Stevens, J. L. Brown, J. H. Williams and R. J. Lowry. Their charter was obtained in July following, the authorized capital being one hundred thousand dollars, of which amount twenty-five thousand dollars were paid in. Mr. J. P. Stevens was elected President and Manager; Mr. L. O. Stevens, Secretary. Mr. Bowman's plant was the nucleus, and orders for additional machinery were placed with the American Watch Tool Company, of Waltham, and C. T. Sloan & Company, of Newark, N. J.

The erection of a two story building, eighty feet deep, was at once begun, it being completed and occupied in the spring of 1883; meanwhile the firm continued to finish up watches as before. The company began work in building factory with eighteen hands, under the superintendence of Mr. W. N. Todd, who had come on from Lancaster for that purpose. The model for the Stevens watch was made by Mr. Todd and was similar to the Bowman watch, with the addition, of course, of Stevens' patent regulator. They were nickel and made in several grades, all stem wind, three-quarter plate, sixteen size and fitting Elgin cases. A line of gilt movements was afterwards added; the pallet and fork are made of one piece of aluminum; this is the lightest known metal, and consequently the lever affords the least possible resistance, so far as the overcoming of inertia is concerned in transmitting power from the escape wheel to the balance. Aluminum, combined with one-tenth copper, is an exceedingly tough metal, therefore, for the purpose as durable as steel, while it cannot rust or become magnetized. The lever of this watch only weighs one-third as much as the lever found in an ordinary eighteen size American watch. The pallets are equidistant locking.

The balance has time and quarter screws and a flat spiral hair spring. The nickel goods made by this company were all full jeweled and the best grades are adjusted. The stem wind device is simple, only differing from other American watches in the matter of shipping and unshipping of the yoke by an eccentric disc, which operates very nicely and affords a firm banking for it. The winding is very smooth. The company found no direct difficulty in disposing of all their movements in their vicinity, and therefore had no occasion to ship them North. In the early part of 1884 Mr. C. L. Hoyt, formerly with the Springfield, Illinois and Rockford Watch Companies, assumed the superintendence of the factory. Mr. C. H. Bagley, for many years with the Elgin Company, had previously taken charge of the jewelry and escapement rooms. Mr. T. W. Thompson, formerly with the Springfield, Mass., Watch Company, and E. Howard & Co., had charge of the finishing, and Mr. Todd remained with the company in charge of the train and plate work. In March, 1884, Mr. Todd severed his connection with the company, and Mr. Hoyt, whose health broke down soon after, also retired. Mr. Chas. S. Bagley succeeded as Superintendent, and Mr. G. S. Kendrick took charge of the train work. On the tenth of June following the firm of J. P. Stevens & Co. purchased all the stock of the Stevens Watch Company held by parties not members of the firm. At this time they also leased the four story building at the corner of Alabama and Whitehall streets, and into which, after thorough refitting, they moved both the jewelry house and watch factory, the latter occupying the two top floors of the building. Here they had more room and succeeded in turning out about ten movements per day, ranging in price from twenty to one hundred dollars each, which were at this time mostly sold in the retail department of the house.

In October, 1885, the progress of the factory was arrested by the death of Mr. J. C. Freeman, who held a large monied interest both in the store and in the watch factory. The heirs of his estate became involved in litigation, and in consequence Mr. J. P. Stevens withdrew entirely from both the jewelry store and watch factory, selling out his interest to D. N. Freeman & Co., who represented the Freeman heirs. No further attempt was made by that firm to

manufacture watches. In the spring of 1887 they failed and went out of business. The stock and unfinished watches was bought by Freeman & Crankshaw, who have since then disposed of the machinery. Mr. J. P. Stevens is now at the head of the firm of J. P. Stevens & Bro., retail jewelers, which firm started immediately after the dissolution of J. P. Stevens & Co.

(To be Continued.)



[From our Special Correspondent.]

PHILADELPHIA, April 16, 1888.

On the first of the present month Mr. Joseph Muhr retired from the firm of H. Muhr's Sons, jewelers, watch and diamond merchants and watch case manufacturers, at 629 and 631 Chestnut street. For some time past proposed changes in this firm have been rumored about and hinted at, and it was said recently that the house intended to move its quarters to Broad street. The members of the firm have repeatedly denied that story, and now that the change has been given out the rumors will in all probability cease. Joseph Muhr entered the firm in 1873. It was founded in 1853 by Henry Muhr, who in 1865 associated his son, Simon, with him, the firm name then being H. Muhr & Son. Henry Muhr retired in 1873 and Jacob Muhr was admitted to partnership with Joseph. It was then that the present name was adopted. At this time the business was carried on on Second street, above Arch, with a factory at Fourth and Race streets. In 1879 the firm moved their business house to its present location, and erected a large factory, known as the "Muhr Building," at Broad and Race streets. The business will be conducted under the same name by Simon and Jacob Muhr.

The partnership of James E. Caldwell & Co., the extensive retail jewelers on Chestnut street, above Ninth, expired on March 31 by limitation. Steps were immediately taken to re-form the co-partnership, which will run for three years from March 31 last. The members of the new firm are the same as of the old, as follows: J. Albert Caldwell, Joseph H. Brazier, Hugh B. Houston, Fred'k Shaw, R. Nelson Caldwell and James Riley, general partners, with the estate of James E. Caldwell, deceased, as special partner, represented by Sarah C. Caldwell, J. Albert Caldwell and Richard A. Lewis, the executors. The interest of Mr. J. H. A. Davidson in the business of the house is continued under the new arrangement. It is evident that the affairs of the previous partnership were in a very satisfactory condition, as the business of the house has been continuously large for years. The articles of the new partnership set forth that the general nature of the business intended to be transacted is the manufacture, importation and sale of watches, jewelry, silverware, diamonds and fancy goods generally.

The trade has produced a defaulter here in the Quaker City. It is Herbert Wells, a slick young man, who was a sales agent for the Keystone Watch Club Company, a Chestnut street installment concern. Wells collected about \$1,200, turned in bogus sales and thus collected commissions to which he was not entitled and skipped the town between two days. Detectives are searching for him, but as yet they have been unsuccessful. It is known that he went from here to Baltimore, but no trace of him can be discovered in that city. He had filed a bond of \$500, a trust company of this city being the surety.

Business is in about the same condition it was at the corresponding period of last month. In the words of a prominent dealer, who sizes

the situation up exactly: "First Dueber crops up and people won't buy. Then he dies out and they buy a little, and that's about the way it goes." Continuing his talk with THE CIRCULAR correspondent, this dealer said: "We can't complain about the state of trade. Our people in the South are doing very well and placing quite a number of orders. Beyond that there is little or nothing of interest in the business."

The National Watch Case Company can now be said to be fully under way; all the complaint incident to the change made by Booz & Humbert has disappeared, and everything now works as smoothly as though the Arch street factory had been established for a decade. The place is handsomely furnished, and fully equipped with all modern appliances for prosecuting the work for which the company was formed.

All the jewelers unite in declaring that there is nothing stirring beyond the current events of which this letter treats. They are all hopeful, however, and expect good trade as soon as the weather becomes settled and the strikes in the West are declared off or decided one way or the other. Mr. L. A. Scherr, of L. A. Scherr & Co., saw nothing during his recent trip to and from California to indicate anything but a healthy tone to the trade, if local labor troubles were out of the way.

McCarty & Hurlburt report fair business, with improvement over that of last year, and Mr. Peter L. Krider and Wm. H. Sheaffer & Co. may be classed as in about the same category. Atkinson Bros. still say that they are doing a rushing business in watches, and Hollinshead Bros. have enough trade to keep one member of the firm moving on the road constantly. Hagstoz & Co. are also selling goods fairly well.

Optical instruments are meeting with a really good demand, all things considered. The labor troubles are making their influence felt in this trade as in all others, however. "Why," said Mr. Zinema, of M. Zinema & Bro., "one of our salesmen writes that he saw a street riot in front of his hotel in Omaha in which blood ran like water; such a state of things is not conducive to business."

Mr. Mayer, of Chestnut street, evidently has nothing to complain of, and Mr. Williams, of the Philadelphia Optical Company, is buoyant and cheerful over the prospects as well as the present status of business.

The major share of stock in the National Optical Company is owned by Mr. Horatio N. Fitzgerald, a prominent citizen and capitalist. The company is incorporated. Whether Mr. Fitzgerald intends to let others into the corporation is still an open question. He is liberal in fitting up the works at 11th and Mifflin streets, and under the energetic management of the superintendent, Mr. C. B. Bishop, success is among the things that must be.

PENN.



[THE CIRCULAR is not responsible for the opinions or statements of contributors, but is willing to accord space to all who desire to write on subjects of interest to the jewelry trade. All communications must be accompanied by a responsible name as a guarantee of good faith. No attention will be paid to anonymous letters. Correspondence solicited.]

CLOCKS AND WATCHES ON THE INSTALLMENT PLAN.

To the Editor of the Jewelers' Circular:

My past experience in the trade in selling watches and clocks on the installment plan leads me to suggest, through the columns of your monthly, to the members of the trade in this State, that Chap. 488, Section 7, of the Laws of New York, 1885, should be so amended as to include watches and clocks; this would make it practicable for us

to sell a watch or clock on the installment plan, retaining the ownership until paid for, and thus do away with the necessity of filing the contracts in a town clerk's office, which is often a great inconvenience as well as distasteful to the purchaser. If this change was made, property contracts could be printed in duplicate in books, and when used one could be torn out and given to the purchaser as provided by law, and the other remain for reference or for use in taking possession of the property in case default is made in the payment. I would suggest that a bill be introduced into the legislature now in session, amending the act referred to.

J. W. HALL.

Cazenovia, N. Y., April 20, 1888.

PLEASANT WORDS FROM OLD FRIENDS.

To the Editor of the Jewelers' Circular:

I hold THE CIRCULAR in such high estimation that I have them bound as fast as the volumes are completed. I am desirous of getting the number for February, 1882, to complete my volume. Can you aid me? I have duplicates of Vol. VII., numbers 2, 3, 7, 10, Vol. IX., number 3, Vol. X., number 8, Vol. XIII., number 9, which I am willing to sell or exchange. In view of the multitude of trash there is now being published under the guise of trade journals, I am glad to see that THE CIRCULAR retains its old time integrity and sound usefulness. We who are supposed to read such papers read them for the information we hope to gain, and not for the sake of getting filled up with gossip. Life is too short for a busy workman to wade through a lot of trash, and we old workmen certainly do not care to read school boy compositions on the watch. Make THE CIRCULAR conservative and solid. Give us more of the scientific problems involved in a thorough understanding of the principles of horology, and which will enable us to keep up with the times, and if it is necessary to increase the price of subscription, do; only give us the best.

The present custom of taking apprentices and the want of thorough work on the part of the young men who are trying to learn the trade, is sending out over the country a class of unripe workmen, who are apt to degenerate into botches when the eye of the boss is no longer watching them. Let us stop this slipshod plan of teaching boys the trade, and adopt a system of apprenticeship which will praise the master as well as qualify the apprentice to become something better than a hair spring twister or a mainspring mender.

What has become of the "Horological Club?" I used to enjoy their discussions very much.

My letter has grown much larger than I intended, but if it shall encourage and suggest thought I am content.

J. W. HALL.

Cazenovia, N. Y., April 17, 1888.

To the Editor of the Jewelers' Circular:

My subscription to THE CIRCULAR expired with the March number, I think, and I enclose you herewith P. O. order for \$2 for another year's subscription to one of the best trade publications. I enjoy THE CIRCULAR very much, and trust the remittance will reach you in time to prevent any break in my subscription. I consider the monogram sheets the best premium you could have given your subscribers.

Yours truly,

PHOCION S. PARK.

Mexia, Texas.

To the Editor of the Jewelers' Circular:

Enclosed please find note for \$2 and place same to my credit on subscription. I appreciate THE CIRCULAR so much, you know, that I can't afford to let it go; although I am not in business at present, it gives me the desired opportunity of knowing what is going on in the trade.

Respectfully,

T. W. WARREN.

Helena, Montana.

To the Editor of the Jewelers' Circular:

Will you kindly send me THE JEWELERS' CIRCULAR for the coming year. I have enclosed P. O. order for 135. 6d., value three dollars. Please to enclose the monogram sheets for last year; they will be

very valuable to us. A friend in London gave me last month's CIRCULAR; I am very much pleased with it. We have nothing to compare to it in this country as regards matter, advertisements or general style of get up.

I am, yours faithfully,
Guildford, England, April 5, 1888.

R. SALSURY.

Indian Art-Work.



THE native Indian metal chaser, when at work on articles for home use, proceeds in a perfectly simple and rational way, fitting the scrolls, leaves, or grotesque creatures of his decorative repertoire with consummate propriety and tranquil certainty of hand to hooka bowls, water vessels, rose-water sprinklers and the like—objects of definite and accustomed uses, and of forms that only vary in subtlety of line, and are never tortured by wilful efforts to attain mere novelty. For these, however, Western people have but little use. They demand from him tea pots, cream jugs, race cups and “vases”—a terrible word, meaning a hundred shapes, from the Italian alabaster horror, three feet high, to the opal and ruby Bohemian glass chimney ornament. So he is shown European silversmiths' and electrotypers' illustrated catalogues. These come with the sanction of finer print and paper than the Indian workman has ever seen, and, being Western, have an authority which only those who have tried to explain their real worthlessness to the natives can understand. These, it is plain, are disturbing influences, and the problem of fulfilling Western uses, without losing the Oriental spirit, can only be satisfactorily solved by the improved cultivation and taste of Western buyers.

Since natives almost invariably use brass or copper for culinary, domestic and sacrificial purposes, the coppersmiths' trade, with the attendant crafts of casting, beaters, or repoussé work, and chasing, is universally practiced. It may be noted that very little engraving, in the Western sense of the word, is done in India as a means of decoration, and the fine meagre lines on perfectly true, hard surfaces, the pride of European workmen, are comparatively unknown, since the graver, cutting a clean line from which the burr is scraped, is not used. The hammer, punch and chisel produce a bolder, simpler and more effective decoration. The most popularly known variety of this work, as a commercial product, is the Benares ware, largely produced for a not very intelligent market. The entire surface is covered with grotesque figures and foliage, boldly chased and highly polished. The forms are very various, but the prodigality of thoughtless labor, which leaves no morsel of skilfully contrasted plain field, ends by being tiresome. In this case, as in other branches of industry, the Hindu middlemen and dealers, who, like all the dusky races of Hindus, such as Bengali baboos, Rhutriyas, etc., are curiously indifferent to art, care only that there should be “plenty work” on the wares they sell. The truth is that better brass work than that of Benares can be had in several large towns, especially at Ahmedabad, in Guzerat, while scattered over the country are artificers who make lamps, antimony bottles, images, caskets, sacrificial spoons, etc., in purely Hindu taste, using elephants, birds, animals and grotesque divinities, in the fashioning of these pleasantly quaint and interesting objects.

The *Siyah Ralambari*, a sort of niello, made at Moradabad (northwest provinces), where deep graving in brass is filled with a

hard black composition, and then tinned or silvered, with sometimes the brass reserved in places, and polished to a perfectly smooth surface, is one of the most familiar and highly-finished forms of Indian metal work. It is really a revival, and owes much to the fostering care of a member of the government, and of a native gentleman of position. The patterns show the usual modern tendency to excessive minuteness, and mechanical finish is, perhaps, more considered than variety of design. But the art is capable of extended application, and its means are so simple that it will be difficult to vulgarize it. Obviously it must be a very bad ornament, indeed, to offend the eye, when delicately traced in silver and gold on a ground of pure black.

An older method of decorative metal-work—silver inlaid with a black material resembling pewter, but much harder—is known as Bidree ware, from the old Mohamedan town of Beder, where it is believed to have originated. The pattern and not the ground is here graven and channeled, and tiny plates and wires of silver, cut to shape with scissors, are hammered into the forms, the final polishing resulting in a silver mosaic on a fine-toned *mat*, black, which, however, is scarcely black. Formerly the designs were bold as well as delicate, and portions of the dark field were left, while now an equal distribution is aimed at. Both notions are sound enough, but the exclusive practice of the latter gives the work an air of monotony. Hyderabad, in the Deccan, is the modern seat of this manufacture, but it is also practiced at Lucknow.

In Southern India, at Tanjora and Madura, copper vessels, trays, etc., incrustated with silver cut in the form of fishes, animals, flowers, and ornaments, of distinctly Turanian character, are produced. The silver is worked in thicker pieces than seems necessary to the effect, and, when new, the contrast between the red copper and the white silver is more pronounced than pleasing.

The metal chasing of Cashmere is of Persian origin, and copper is the favorite material. Arabesque ornaments that sometimes recall the fine patterns on old Persian wine bowls, but more frequently a uniform distribution of minute details resembling the shawl patterns, are engraved and then filled with lac, the raised parts being tinned like the Moradabad niello, only in the Cashmere work the surface is not made so mechanically perfect. Besides this pleasant roughness, which gives a better tone to the Cashmere ware, the design is in a quite different style and feeling. Silver is treated in a similar way, without a black ground, but sometimes with the addition of colored enamel, usually disagreeably raw and crude in color, and more often with a light gilding on the raised parts, which produces a singular delicate and pleasing effect, the rest of the chased work being left in a peculiar tone of dead and half-burnished white, like snow and pearls just touched with gold. In nearly all modern Cashmere products the well-known pine form of the shawls may be considered the decorative unit, re-appearing in painted papier-mache, wood-work and metal. This misruled country is liable to famines, and in former times large numbers of workmen emigrated to the plains. “Cashmere” silver-work is now made at Lucknow, and at Amritza is an important trade in Cashmere shawls.

The silver-work which takes its name from the kingdom of Cutch, and the best of which is made at Bhey, the capital of a native state north of the Bombay Presidency, is nowadays applied to articles of European use, and finds extensive sale. The workmen are Hindus, and among their ornaments figures of animals and, occasionally, of divinities, are seen. Generally the patterns are of equally distributed scrolls and foliage in relief, on a ground dotted or roughened by the punch. In buying this ware the weight of the silver is first charged, and then so much per rupee is added for workmanship—a rate which varies according to the elaboration and quality of the work. This practice is universal where metal is concerned. A mechanically better finished kind of silver repoussé, on the same principle, is made at Delhi, but the forms are apt to become meagre and threadlike. The collector at times comes across large pieces of embossed silver, for which there seems to be no use in our civilized life, boldly ham-

mered up and chased, with no suicidal attempt to smooth off the marks of hammer and chisel. These, though sometimes merely coarse and clumsy, have often a quite royal effect, and seem to indicate that our Western treatment of silver is more timid and tiny than it need be.

Indian jewelry is too vast a subject to be adequately treated in so brief and general a sketch as this. The universal custom of putting savings by in the form of gold and silver ornaments necessitates the presence of a goldsmith in every village. The wife of a peasant, whose gross income is but two hundred rupees all told, and whose house is furnished only with a bed and a few cooking pots, wears on her person from fifty to eighty rupees' worth of ornaments, and other classes in proportion. The nostrils are sometimes pierced and the ears riddled with perforations, from top to bottom of the distorted lobes; the ankles are, by some castes, loaded with heavy, bell-studded fetters, the wearing of which would be considered a grievous punishment by a Western belle; the head is laced with chains, studs and plates; the arm is loaded sometimes from wrist to shoulder; toe rings are common, and occasionally rings on each finger are connected by chains with a large ornament or gold-set mirror on the back of the hand. All kinds of things are used for ornaments; natural marigolds are set with plates of talc; necklaces of cloves are considered good for the headache, and are certainly pretty; pewter, iron, brass, zinc, copper, glass, horn, shell and lac are used for bangles, tons of glass and lac being annually worked up for this purpose alone. There is material for a volume in the quaint fancies and superstitions associated with precious stones, each of which is minutely classified in all possible varieties. Each caste and race, also, wears ornaments of distinctive forms, and though railway travel has diffused geographical variations, it has by no means superseded them.

Without attempting more than a reference to this subject it may be fairly said that the jewelry by which India is known abroad, such as the gold-work of Delhi, set with precious stones, pretty, and occasionally European in taste; the silver filigree of Cuttack, which resembles the dainty metal cobwebs of Malta and Genoa; the Swami gold and silver ornaments of Trichiopoly and Madras, rough with grotesque, many-armed gods, and the chiseled silver of Lucknow, are not quite the best and most characteristic forms the country can show. Among the hill people and in outlying districts are still to be found bracelets, necklets and other gear, rough, indeed, in workmanship, but bold in design, resembling more the ornaments adorning the figures of ancient Hindu sculpture than the comparatively flimsy things made for the Western market. Many of the best of these are too barbaric in general form for adoption by English or American ladies, who would object to their size and massiveness. Their simplicity, however, is real and natural, and very unlike the bold plainness the Western goldsmith attains when he cunningly strives for this precious quality.



[From our Special Correspondent.]

ATTLEBORO, April 16, 1888.

In my last letter to THE CIRCULAR I said the jewelry business in this part of the country was flat, and I say now it is flat. There have been times before when our manufacturers felt the business was dull, but it has now reached about the lowest ebb that has been reached for a long time. It is discouraging both to employers and

employees, but they are living in hopes of something better in the near future.

Since my last letter we have experienced the first strike which has ever occurred in any of the jewelry establishments in this town. It has been the boast of our manufacturers that while other places have had to overcome the labor troubles we have gone along without anything of the kind, but our turn has come, and although it was nothing of a serious nature, it only shows what may be done even in the best regulated shops. The facts of the case are that about 15 engravers and the designers in Bates & Bacon's watch factory, objecting to some of the rules which the firm had posted up through their foreman and petitioned Mr. Bates to have them changed. He told them the rules were ordered by him and he should see they were enforced. Upon this they left the shop. They were met at the door by the proprietor, who told them that if they went they need never expect to come back again. Of course, work was delayed a few days, but a great many men being out of work their places were soon filled, and the men who were earning on an average of \$3 per day are now loafing about the streets with nothing to do.

Watson & Newell have been doing about the best in the way of running full time of any shop in the place. About the middle of March they were shut down a few days, but now the order is ten hours a day. This is, in a measure, owing to the energy of their thoroughly wide-awake salesman, Mr. J. F. Ripley. He made a recent trip to Montreal with good success, and he is now in Chicago. He always carries a good-looking sample case, and his quiet and affable ways make him very popular.

Mr. M. O. Wheaton, of the firm of Wheaton, Richards & Co., has been quite ill, but will soon be found at his office.

Mr. John Cummings, of Cummings & Wexel, arrived home this week from a trip to New York, where he found the jobbers unwilling to place many orders.

H. A. Dean & Co. have completely shut down their shop, although they hope to open it again in a few days.

Marsh & Bigney is a firm that generally holds out about as long as any in this vicinity, but the best they can do is two or three days a week.

W. H. Wilmarth & Co. are trying to hold out at 40 hours a week, but feel that they may be obliged to shave even this before long.

Mr. J. M. Fisher, of the firm of John M. Fisher & Co., is now in Florida, where he has gone on account of his health. Letters recently received from his family would suggest that he is very low, and doubts are entertained of his ever recovering sufficiently to reach home. Mr. Fisher has been an ardent temperance worker and a live, energetic business man, and his many friends hope to again see him about his business.

ATTLEBORO FALLS.

The shops here are fearfully dull, and the manufacturers feel that things have about reached rock bottom.

R. F. Simmons & Co. are the largest firm here, but at present see but little to encourage them.

Mr. J. L. Sweet, of this firm, is on a trip to Cuba. The recent case in the courts proved too much for him and he is trying to gain in health before the business starts in again.

NORTH ATTLEBORO.

Here again we find the same old cry of dull times, which is, to say the least, becoming quite monotonous; I think especially so to the manufacturers and those who are thrown out of work. To be sure the people here have had something to interest them in the shape of their annual town meeting, but this is past and everybody wants work.

Mr. H. F. Barrows, who recently made a trip to Florida has returned.

Mr. Alonzo Bennett and Mr. D. D. Coddling have returned from

their trip to California, looking as though they had greatly enjoyed themselves.

Bugbee & Niles are trying to keep abreast with the times, and even to do a little better. Orders come slow and the prospect is not very encouraging.

Mr. F. M. Whiting has been making a trip through the South, but has now returned and is attending to the business of his establishment.

Mr. David Chisholm, who has for some time been employed as bookkeeper by Healey Bros., has severed his connection with the firm and taken a similar position in Boston. His friends made him a present of a beautiful gold watch before his departure.

PLAINVILLE.

Here, as at Attleboro, the business is at low tide, and there is nothing of any consequence to report this month, with the exception, perhaps, of the 30th marriage anniversary of Mr. and Mrs. Edward P. Davis, of the firm of Wade, Davis & Co. They invited a large number of their friends to meet with them in the town hall, and passed a very pleasant evening.

I hope that my letters will hereafter contain more interesting news, but when there is nothing going on it is no use trying to manufacture items.

MENDON.

Dressing Show Windows.



CORRESPONDENT writes to know if we cannot give him some hints upon the proper arrangement of goods in his show window so as to attract the greatest amount of attention. He suggests that we might describe the windows of some of our city retail dealers, and even give diagrams of them, illustrating as well as explaining their arrangement. This is not feasible, as it would involve elaborate drawings, engravings and artistic work that would not be satisfactory when done. The best we can do is to give some general hints,

derived from contemplation of the windows, many of them elegantly arranged, of our local dealers. In the first place no one can arrange a window artistically who has not the eye of an artist, and one that appreciates the effects of colors and their harmonious blending. He must also have good taste and good judgment. One of the most effective windows we call to mind is lined on the bottom and sides with black velvet; mirrors are arranged so as to reflect the images of the goods on exhibition, thus apparently increasing the display. These are kept in such a high state of polish that we have been deceived, and had to look a second time to see if there were not a depth to the window that outside appearance denied. In this great velvet case a few choice pieces of jewelry are displayed, without crowding or mixing up a lot of cheap articles with those of rare beauty and value. This window is changed frequently, so as to add the charm of novelty to richness and elegance. On one day there may be an elegant necklace, made up of diamonds and other precious stones, resting in an appropriate case; it is carefully placed so that its great beauty and evident value will catch the eye of even the casual observer. This is the center piece, and everything else in the window is subordinate to it, both in the size of the article and the manner of its display. There may be a pair of bracelets and a pair of ear rings, placed at a distance from the necklace; they harmonize with it perfectly, and are such as a lady wearing the necklace might

appropriately wear as accompaniments to it. There is nothing in the window that would be out of place beside the necklace under any circumstances. While it is almost impossible to say wherein the charm of such a display lies, it will be readily seen that if a choice article like that were thrown hap-hazard into a common boarded window with a half bushel of cheap silver watches, the effect would be lost entirely and the necklace would pass for nothing better than a cheap fire-gilt article. On another day this same window may exhibit as its objective two or three fine chronometer watches in their handsome gold cases, the movements in perfect order and showing the exact time. Surrounding it may be half a dozen handsome watches of different sizes and patterns, each having attached an appropriate chain. Nothing else is permitted to detract from the one idea the dresser had in mind, viz., to impress upon the observer the fact that the dealer had on hand a choice supply of fine watches. Again, we have seen this window when it contained only a few choice scarf pins, but that they were choice and desirable was assured by the first glance. There is here never an excess of display; the idea of the dresser appears to be to give prominence alternately to the special lines of goods to be found within; to always have something new and attractive as his "leader" in the line he is displaying, and to lead up to by comparison with other articles of lesser value but in the same line or in perfect harmony with it. The arrangement of mirrors serves to duplicate the display and to heighten the effect. Dealers in clocks have abundant opportunity to display attractive goods to advantage, for the novelties in their line is legion. Nothing so well serves to attract and hold the attention of passers, however, as something of a mechanical nature; a clock that will bring forth birds and beasts or that will perform some simple mechanical operation will always command a crowd. A very handsome and enticing display of watches is now made by surrounding a strong magnet with non magnetic watches, all running in unison despite the influence of the magnet. In silverware displays the same idea, of surrounding a prominent center piece with harmonious articles, will make a very attractive window. Novelties are all the rage, and these should be shown prominently as soon as received. The great point in dressing a show window is not to overload it, to have all articles shown harmonize in point of usefulness as well as in color and value. A choice diamond mixed up with a lot of agates would scarcely show for what it is worth. It is the same with other lines of goods. What a dealer should strive for is harmony, symmetry—putting his choicest goods forward so that the public will understand that he carries them—and, as much as anything, variety. A show window should be rearranged at least once a week; passers can tell from a mere glance with the tail of their eye whether the display is the same old one they have seen so often that it has grown offensive to them, or whether there is something new and novel, really worthy of being looked at. If the latter, they stop to study it and go away with a new and favorable impression, and credit the dealer with good taste and enterprise. A jeweler's window has no right to be a junk shop, filled with odds and ends, but should be arranged so as to convey to the public an idea of the art and skill that are embodied in the trade. Dealers are prone to neglect this matter of display, feeling that what has done service one month is good enough for the rest of the year. They appear to be satisfied with anything that conveys the idea to the public that there is a jeweler concealed somewhere behind the door. A country bumpkin was once sent to the neighboring town with a bag of roasting ears of corn to sell, his employer having been informed that there was a great demand for them. The lout returned at night bringing back all the corn he took with him. Being asked how he had attempted the sale of them, he replied that he went to the corner of a street and placed his bag on the sidewalk; presently a man came along and asked him what he had in the bag, and he replied that it was none of his business, and every other inquirer was treated in the same manner, so that he had not once opened his bag during the day. It is no use for a man to have a good thing to sell unless he lets the public know it. Moral—advertise liberally and keep your show window in order.



The following list of patents relating to the jewelry interests, granted by the U. S. Patent Office during the past month, is specially reported to THE JEWELERS' CIRCULAR by FRANKLIN H. HOUGH, Solicitor of American and Foreign Patents 925 F Street, N. W., rear U. S. Patent Office, Washington, D. C. Copies of patents furnished for 25 cents each.

Issue of March 27, 1888.

- 379,929—Button. William Bourke, Brooklyn, N. Y.
 379,936—Spectacle Case. William F. Cloud, Topeka, Kans.
 379,963—Stop Watch. Harry A. Leonard and Gover Kettlewell, Baltimore, Md., Assignors of one-third to Richard S. Culbreth, same place.
 380,225—Stem Winding and Setting Watch. Oscar F. Stedman, Cuyahoga Falls, O.
 380,279—Safety Watch Pocket. Anna Dormitzer, New York, N. Y.

Issue of April 3, 1888.

- 380,380—Manufacture of Safety Pins. Barton A. Ballou, Providence, R. I.
 380,407—Tool for Removing Watch Hands. Jefferson C. Rand, Maynard, Iowa, Assignor of one-half to George W. Hanes, same place.
 380,491—Eye-Glasses. Amelia Kahn, St. Joseph, Mo.
 380,496—Machine for Pointing, Drilling and Reaming. Frank Leman, Elgin, Ill.
 380,497—Machine for the Manufacture of Pillars for Watch Plates. Frank Leman, Elgin, Ill.
 380,498—Machine for the Manufacture of Gear Wheels. Frank Leman, Elgin, Ill.
 380,499—Manufacture of Pinion Blanks. Frank Leman, Elgin, Ill.

Issue of April 10, 1888.

- 380,769—Watch Balance. Peter W. Rohde, New York, N. Y., Assignor of one-half to Meiners & Schuette, same place.
 380,807—Manufacture of Buttons. Daniel A. Ladd, Newark, N. J., Assignor to the Newark Collar Button Co., same place.
 380,869—Watch Protector. Julius Debrinke, Salt Lake City, Utah.
 Re-issue No. 10,920—Clock Movement. Arthur E. Hotchkiss, Cheshire, Conn. Original No 221,310, dated Nov. 4, 1879; re-issue No. 9,656, April 12, 1881; re-issue No. 10,062, March 4, 1882.

Issue of April 17, 1888.

- 18,262—DESIGN for Lamp Fount. Albert Patitz, Meriden, Conn., Assignor to The Bradley & Hubbard Mfg Co., same place. Term of patent, 7 years.
 381,097—Attachment for Lathes. John W. Allen, Hartford, Conn.
 381,103—Button. Achill Bippart, Newark, N. J.
 381,176—Mainspring for Watches. Frederick Sedgwick, Chicago, Ill.
 381,214—Engraving and Chasing Machine. John A. Coburn, Springfield, Mass., Assignor to John C. Dueber, Newport, Ky.
 381,219—Stem Winding and Setting Watch. Walter D. Davies, Brooklyn, N. Y., Assignor to the Ansonia Clock Co., Ansonia, Conn.
 381,260—Electro-Magnetic Spectacles. John T. Leighton, Edinburgh, Scotland. Patented in England September 2, 1886.
 381,319—Button. Frank P. Barney, Chartley, Mass., Assignor to Engle, Wetherell & Co., same place.
 381,328—Hinged Shoe Button. George C. Bugbee, North Attleboro, Mass., Assignor of one-half to T. K. Merrill & Co., Providence, R. I.
 381,347—Opera, Field or Marine Glass. George H. Eaton, Boston, Mass.
 381,477—Hinged Shoe Button. Russell H. Lewis, Providence, R. I., Assignor to B. L. Hall & Co., same place.

Issue of April 24, 1888.

- 18,264—DESIGN for Clock Dial. Archibald Bannatyne, Waterbury, Conn., Assignor to Waterbury Clock Co., same place.
 18,267 and 18,268—DESIGNS for Ornamentation of Glassware, etc. Thomas G. Hawkes, Corning, N. Y.
 18,272—DESIGN for Clock Dial. William Lawson, Waterbury, Conn., Assignor to the Waterbury Clock Co., same place.
 381,601—Stem Winding and Setting Watch. Joel N. Whipple, Volga, Iowa.
 381,603—Winding and Setting Attachment for Clocks. John

Zelly, Cincinnati, O., Assignor of one-half to Frederick Fischer, same place.

381,626—Clock. Arthur Junghaus and Heinrich E. Junghaus, Schramberg, Württemberg, Germany. Patented in Germany, No. 39,365.

381,718—Metalic Alloy. Heinrich Osterman and A. Prip, Geneva, Switzerland.

381,719—Metalic Alloy. H. Osterman and Chas. Lacroix, Geneva, Switzerland, Assignors.

381,785—Means for Beveling Watch Wheels. Henry Huguenin, Waltham, Mass.



[From our Special Correspondent.]

MINNEAPOLIS, MINN., April 14th, 1888.

The wholesalers report that there is a decided improvement in their trade since my last letter, but the retailers in these two cities have had comparatively little to encourage them yet. Business has been so dull, however, throughout the country, that even a small revival is welcomed by the jobbers. Business has been practically at a standstill with them since a short time before the holidays, and they have found collections since then by no means good. Lines of travel are open everywhere now throughout the northwest, and a good many of the country merchants have been in the cities laying in goods for the spring and summer trade. Other lines of business in the northwest have suffered by the exceedingly severe winter and the almost complete embargo on travel. Naturally the jewelry trade has been first to feel the effects of the depression which has prevailed.

The trade, both retail and wholesale, is watching with a great deal of interest now the contest between the manufacturers of movements and cases belonging to the associations and Dueber and Hampden. The full effect of the cut in prices and the attitude of the combination during the present contest is felt more keenly in the west than elsewhere. One of the western jobbers doing business in a small way and one of the best posted of them said to me to-day that it was absolutely impossible for any jobber to do business on a 10% profit. The distances which are required to be travelled, the heavier railroad fares which prevail in the west and the detail of selling goods in comparatively sparsely settled communities make the expenses heavy. On the other hand, a leading jobber assured me that he was having offered him constantly goods without regard to the association's rules and edict in the present contest and that he was satisfied that a final settlement of the difficulties in some shape or other was not far away. The retailers, or some of them, have been able to buy goods directly from the manufacturers on terms satisfactory to them, and would be glad to see the present attitude of the association toward Dueber and the Hampden company at an end.

A. C. Becken, who is entitled to the distinction of being the pioneer jobber in watches, chronographs, chains and charms, to locate in St. Paul, is about to remove to new quarters at No. 209-211 East 4th st. These he has fitted up in handsome shape and will be provided with rooms commensurate to his growing business. The move is made at the end of the first year of Mr. Becken's business career in St. Paul, and he celebrates it by the removal from his present limited quarters on Sibley street.

Another new jobbing house to be known as the St. Paul Jewelry Co., and to handle a general line of jewelry, is to be located in St. Paul and will occupy the rooms vacated by Mr. Becken. Some mention of this house under a different name was made in a previous letter.

Charles E. Lightner, formerly in business at Elgin, Illinois, has

opened up a retail establishment at No. 149 E. 3d st., St. Paul. This is the most important acquisition to the ranks of retailers which has recently been made. Mr. Lightner has fitted up his store handsomely and put in a very complete stock, and has already attracted considerable trade. He is also to manufacture jewelry to some extent. Mr. Lightner has been engaged in business either at Elgin or at Chicago for some time and is well known. Some time ago he married his second wife in St. Paul and this was the propelling power in his removal from Elgin to St. Paul.

Robert Donnell, a St. Paul jeweler, has recently distinguished himself by marrying one of the prize beauties in the dime museum beauty show. The young lady's name was Elmira L. Parle, and she hails from Chicago, although in the beauty exhibition she was known as No. 13. Mr. Donnell became smitten with her during the time the bevy of beauties was on exhibition in St. Paul. The following week they were in Minneapolis, and on Tuesday of that week Mr. Donnell's suit was successful and the marriage was celebrated, much to the interest of the remaining members of the beauty show, and the delectation of the newspaper reporters, who wrote long and sensational accounts of the affair.

There has been the usual failure in the retail trade in Minneapolis this month. Bryant & Ellis were the firm. They were doing business in a small way and the failure is not at all important except to the few creditors to whom the firm was indebted. This makes five failures in Minneapolis within as many months and bears out what has very often been remarked in the trade, that the retail business in this city is overdone. The best evidence of this lies in the fact that although St. Paul has nearly if not quite as much population as Minneapolis, there are nearly two retailers to one in the latter city. As a rule, too, the dealers in St. Paul get better prices for goods than they do here. This, of course, is the result of the excessive competition in this city.

This may not be exactly the place to tell the story, but I was immensely amused recently at a quick repartee made by a traveling man for a prominent jewelry house. I was down to La Crosse a few days ago and there were no less than eight representatives of different jewelry establishments at the hotel. It is needless to say that they were all of Hebrew descent and each had his own story to tell of the extent of his trade and what he had known other commercial travelers to have sold. "Why," said one of them, in a burst of enthusiasm, "I know so-and-so to sell six pounds of 18 karat rings to so-and-so in Cincinnati." There was a burst of "Ohs" and "Ahs," and intimations that the story teller was the biggest kind of a liar. Insistence on the part of the relator that the story was a true one and that six pounds of rings did not amount to much anyway, when one of the boys in utter disgust remarked: "My gracious! the first thing you know you will want car load rates on rings."

A. J. Warner, of the Warner Jewelry Company, is on his second trip to the Pacific coast since last November. He has been absent now about three weeks.

Silver Ornaments from Florida.

GEORGE F. KUNZ.

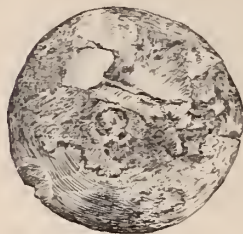


OME very interesting silver and other ornaments were recently sent me which had been found in an Indian mound at Smidt's Key, Monroe County, Fla., near the mouth of the Caloosahatchie River. From the fact that a string of Venetian beads was buried with them there can be no doubt that they are of post-Columbian origin, and cannot date back farther than the Spanish occupation, about 300 years ago. It is quite probable that they were left by Pizarro when he landed on the coast. All the silver objects are dull brown in color and have been altered to some depth to horn silver (cerargyrite), the chloride of silver evidently being the result of the action of

the salt water with which the soil where they were buried is saturated.

These objects were found 150 miles southwest of those described in this journal in July, 1887, are of a different type and much more recent date.

The circular disk (No. 1) measures 3 inches in diameter and weighs 10 pennyweights, 15 grams. It has been very much broken through its change into horn silver, and adhering to both sides is some cloth of Spanish manufacture. It is concave on one side and has on this side a circular opening a half inch in diameter directly over which, on the opposite or convex side, is a circular piece of silver one inch in diameter. This evidently served the purpose of raising this side



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FIG. 1.



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FIG. 2.

more, adapting the disk for use on a shield possibly. Or, it may have been intended for an earring, the large piece forming the front and the small piece the back.

No. 2 is a disk four inches in circumference which evidently served as a pendant to the Venetian beads (see fig. 5). It consists of a twelve-rayed sun with a round hole in the center. The rays all merge into an outer rim in which are twelve ellipsoidal openings, one opposite each ray; the outer edge of the rim is scalloped, and it is curious to note that there is the same number of scallops, ellipsoids and rays, namely, twelve; weighs 13 pennyweights, 20 grams.

Two pairs of silver earrings found with these are illustrated in figs.



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FIG. 3.



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FIG. 4.




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FIG. 5.

3 and 4. One pair is of conical form, hollow and has a ball top. The others are long, plain drops. It is impossible to say whether anything was put in the hollow conical pair to produce sound. The string of Venetian beads (fig. 5) measures 14 inches in length. They are white, yellow, blue, red and green, some showing a beautiful iridescence, all more or less, but none preserving any of the original polish.

A broken piece of brown glazed pottery of Spanish make was found with the above objects, and was evidently one of the prized possessions of the deceased, perhaps not less precious than the ornaments.

WORKSHOP NOTES



TO EXTRACT SILVER FROM WASTE PRODUCTS.—Mix your refuse with an equal quantity of wood charcoal, place in a crucible and submit to a bright red heat, and in a short time a silver button will be found at the bottom. Carbonate of soda is another flux.

TO TEMPER A DRILL.—For getting a nice temper on a drill, heat it to a dark cherry-red heat (not bright, else you will have all the life out of it), and dip it in soft water with a strong solution of cyanide of potassium, which leaves it perfectly bright; then draw to a bright purple.

TO TAKE OFF THE COLLET.—Never use tweezers for taking off a collet; it should be lifted off square, but not twisted off; the handiest tool will be found to be a pair of long-jawed nippers. The use of a knife, tweezers, etc., will invariably injure a fine balance by prying and twisting the collet.

DIP FOR CUTTING TOOLS.—A French engraver has discovered that the engraving tool will cut much more readily into metals which ordinarily were impenetrable, if the tool is occasionally dipped into petroleum. The hardest steel, however, is engraved easily, if the tool is dipped into a solution of two parts of petroleum with one part of turpentine.

TO DEMAGNETIZE SMALL TOOLS.—The following recipe is clipped from the *Schweiz. Uhrm. Ztg.*, which we make responsible for any harm done to the tools: "Bench tools will sometimes become magnetized from different causes, and a simple, sure way to demagnetize small tools, such as punches, screw-drivers, tweezers, nippers, etc., is to throw the tool violently upon the floor in such a manner that the magnetized part strikes it, and, if possible, remains sticking in the floor." Before doing it on a large scale, however, we would advise the party to try an experiment with a thin broach or chamfer of fine steel and highly tempered.

SILVERING POWDER AND FLUID FOR METALS.—The powder is prepared by grinding together thoroughly 13 grams melted tin and 15 grams (231 grains) mercury, and mixing this substance with 120 grams (1,851 grains) prepared hartshorn. The article to be silvered is well rubbed with this powder and quickly assumes a silver-like appearance. The fluid is composed by dissolving 1 part nitrate of silver in 20 parts of water, and adding sal-ammoniac to this solution until white, cheesy precipitate ceases. The fluid above the precipitate—chloride of silver—is decanted as soon as it is clarified, the latter is washed upon the filter with some distilled water; it is then dissolved in 2 parts hyposulphite of soda, and the fluid is next mixed with a little lime water. The article to be silvered is washed with this fluid and then rinsed in water.

TO ENGRAVE GLASS.—Some of the interesting effects obtained by Mr. Planti with his secondary batteries have suggested to him a new method of engraving on glass. The method he adopts is this: A plate of glass or crystal, in a horizontal position, is covered with a concentrated solution of nitrate of potash. Into the liquid layer and along the edges of the plate is introduced a horizontal platinum wire, connected with a secondary battery of fifty or sixty elements. Then holding in the hand the other electrode, formed of platinum wire, and sheathed, except at the point, with insulating material, you touch the glass with it at the parts where the characters are to be reproduced. A luminous track is produced wherever the electrode touches, and the lines are found to be distinctly engraved on the plate. The more slowly the operation is performed the deeper are the lines, and their width depends on the diameter of the electrode. Either electrode may be used to engrave with, but a less strong current serves for engraving with the negative electrode. Any source of electricity of sufficient quality or tension would serve for the purpose, for instance, a Bunsen battery or a Gramme machine.

TO MAT-PICKLE SILVER.—Articles which are to be pickled white and mat are coated and red-heated the last two times with a finely-pulverized mixture, prepared with water of six parts well-calcined cream of tartar, four parts pure potash, and three parts good charcoal; the articles are tempered in water, and after this coating has been softened and taken off they are boiled in alum water or in the silver pickle.

MELTING AND REFINING.—In melting brass or gold, urge the fire to a great heat and stir the metal with the long stem of a tobacco pipe to prevent honeycombing. If steel or iron filing get into gold while melting, throw in a piece of sandiver the size of a common nut; it will attract the iron or steel from the gold into the flux, or sublimate of mercury will destroy iron or steel. To cause gold to roll well, melt with a good heat, add a tablespoonful of salammoniac and charcoal, equal quantities, both pulverized; stir up well, put on the cover for two minutes and pour.

BRIGHT LUSTER.—Bisulphide of carbon, in small proportions, imparts a bright luster to electro-plated articles. Put one ounce of bisulphide into a pint bottle containing a strong silver solution, with cyanide in excess. The bottle should be repeatedly shaken and the mixture is ready for use in a few days. A few drops of this solution may be poured into the plating bath occasionally, until the work appears sufficiently bright. The bisulphide solution, however, must be added with care, for an excess is apt to spoil the solution. In plating surfaces which cannot easily be scratch brushed, this brightening process is very serviceable. Care must be taken never to add too much at one time.

COLORLESS VARNISH.—A colorless varnish is occasionally required by the optical instrument maker or watchmaker, which, if it is not easily procured, may be made without much trouble as follows: Dissolve 2½ ounces of shellac in a pint of rectified spirits of wine. To this is to be added 5 ounces of well-calcined animal charcoal, heated prior to using it, and the whole boiled for a few minutes. If, on filtering a sample of the mixture through blotting paper, it is found not to be perfectly colorless, more charcoal is to be added until the desired result is obtained. When this has been attained, the mixture must be strained through a piece of silk and filtered through blotting paper.

COLOR IN GILDING.—Mr. Ed. M. Chase says that the color of gilding depends very much first, the solution; second, the anode; third, the batteries; fourth, the mode of operating. The best way, he thinks, to make a gold solution is to make a strong solution of cyanide of potassium in distilled water, say, one ounce of cyanide to one quart of nearly boiling water; then fill a porous cup about half full of the solution, and stand it in the vessel holding the bulb of the solution; attach a piece of sheet copper to the wire leading from the zinc of the battery and place it in the porous cell. Then attach a piece of sheet gold to the wire leading from the copper of the battery, and allow the whole to remain until you have about one and one-half or two pennyweights of gold; or the porous cup can be dispensed with by attaching a gold anode to both poles, and suspending in the solution until the one on the zinc side receives a deposit, when the solution is ready to work. The solution should be kept at or above 30° F., as the higher the temperature the deeper the color will be. The anodes should be large enough to keep the solution supplied with gold. He says he has found the all zinc and copper batteries excited with sulphate of copper (blue vitriol) to be the best for gilding, as the current is not so intense as the with the Bunsen cells. Moving the article in the solution will change the color of the deposit. The best results will be had by using a feeble current, large anodes, and keeping the solution very hot all the time. If no good color can be obtained from this solution, the next best thing to do is to use a coloring solution, composed of alum, 3 ozs.; nitrate of potash (saltpeter), 6 ozs.; sulphate of zinc, 3 ozs.; common salt, 3 ozs.; mix to a thick paste; dip the article in it, and place it on a piece of sheet iron over a charcoal fire until nearly black, then plunge into cold water.



EXCELLENCE OF LEVER ESCAPEMENT.—Doctor Hirsch, the director of the Neuchatel Observatory, some years ago, showed, by the mean results of twenty-one years of observations, that watches with lever escapements have proved better time-keepers than those with chronometer escapements, whether spring or pivoted detent.

NEW THERMOMETER.—A standard thermometer is made with a dial upon which the figures are as easily read as upon a clock. In this instrument strips of metal which are unequally acted upon by heat or cold are soldered together, in the form of spirals. The action of the temperature is multiplied by delicate wheels and pinions.

JUBILEE PRESENT.—The Bishop of Leonard, at Eichstätt, Bavaria, will present to His Holiness, the Pope, as a jubilee present, a small, handsome, gilt temple, under which stands the silver statue of St. Walburga, and intended to be the receptacle of Walburga oil. The present, an excellent specimen of goldsmithing, has been manufactured in the shop of Harrach, of Munich, Bavaria.

BIG GOLD NUGGETS.—The largest gold nuggets ever found were the following: The Sarah Sands nugget, found at Ballarat. It weighed 120 lbs. troy, or 1,500 ounces; this, at £4 per ounce, would be worth £6,240. The Blanche Barkly nugget, dug up at Kingower; it weighed 145 lbs., and was worth £6,960. The Welcome nugget, found at Ballarat, it weighed 184 lbs., and was sold for £10,000.

AMUSING STRIKE.—An amusing strike of watchmakers was some time ago reported from Vilag, Denmark. According to this the watchmakers agreed to stop every clock in their windows, and to set them to 12 M. The object was to force the town authorities to provide public clocks, and they appear to have gained some success in the matter, for a commissioner was appointed to inquire into the matter.

NOTHING NEW UNDER THE SUN.—Though electrical storage batteries have attracted attention only within the last seven years, the discovery of the principle is as old as the century, Gautherot having first noticed in 1801 that platinum or silver wire gave off a current after being disconnected from a voltaic battery with which they had been used for decomposing saline water. The first secondary cell of Planté was made in 1860.

ANTIQUITY OF GLASS BEADS.—Glass beads, known as Aggny beads, are found in Ashantee and Fantee countries, and are very highly valued. They are supposed to be of ancient Egyptian manufacture. They are of many colors and patterns, the shades well marked or delicately blended, many of them resembling agates, for which they have been mistaken. The "glain naidyr," or holy snake heads of the Druids, found in Wales, may have had a similar origin, as the Phœnicians traded to both places, and carried Egyptian products. There are abundant evidences in the museums to prove that the capability of the Egyptian glass-workers to produce these objects of art.

NECESSITY THE MOTHER, ETC.—Several years ago a new sort of lead was introduced in the bead industry in Thuringia, which is carried on in the forest districts, viz.: a dull and unpolished lead. Large quantities were manufactured and high prices were given, but the secret how to make these beads could not be discovered, and that in spite of numerous experiments. A short time ago, however, a workman solved the problem, and found that the beads were made dull by sand. In a short time hundreds of people were engaged in producing beads by the new method, and the novelty will no doubt prove a good thing for the not over-prosperous population which carries on the industry of bead-making.

HUGE LIGHTNING ROD.—A committee of French electricians, to whom was referred the question of protecting from lightning the high steel observatory tower at the Universal Exposition soon to be held in Paris, decided that it would itself be a gigantic lightning rod, and that if only care were taken to maintain adequate metallic connection with earth deep enough to be permanently moist, not only would those inside it be perfectly safe during the most violent thunder storm, but everything near it and for a considerable distance around it would be protected. The earth plates will be of copper and will be connected with each angle at the base of the tower by substantial cables. The top is to have a tall copper rod with a gilded point.

"DIAMOND OF THE FIRST WATER."—This expression denotes a stone of the utmost purity and whiteness. The value of diamonds is established by their weight, clearness and color; hence, a diamond of the first water, whatever its size, is worth, obviously, more than one of a corresponding weight and of lesser purity. There is some appropriateness in the phrase, because of the resemblance of the purest of diamonds to the sparkling of water, as in a dewdrop. Talbot is of the opinion, however, that the expression originated in a mistake. He supposes that the Anglo-Saxon spoke of "the finest or purest hue," or color (Anglo-Saxon *hiw*, color). The Normans supposed this word to be their own *ewe*, water, and applied it in that sense.

RARE WATCH.—A watch having but one wheel is still in existence in France, though manufactured in Paris more than a hundred years ago. This watch was presented to the National Institute in 1790, being then in a deplorable state, but under the skilful treatment of an expert, harmony between the various organs was successfully reestablished, so that it is even now in going order. The great wheel, which gives the watch its name, occupies the bottom of the case and the center of the plate; it has 60 teeth; its axis carries two pinions, one of which receives the motive power from a barrel, and the other carries the minute work. The function of this great wheel is quadruple. First, it acts as a lift, then on a lever operating on another destined to lower the axis of the watch, and lastly on a third lever, the latter serving to return power to the great wheel at the moment when the action relents by the rise of the axis.

DIAMOND-MINING AT KIMBERLY.—More than two miles of driving have now been completed in the claims of De Beers' Mining Company in the neighborhood of Kimberly, Griqualand, West. The driving includes 10,330 feet of tunneling, besides 1,150 feet of small shafts, and passes under 1,100 feet of large shafts. The underground works were commenced in April, 1885, and since that date upward of 300,000 loads of rich, blue ground have been hauled by an inclined shaft. At the present time the daily output of blue at this shaft amounts to 1,800 or 1,900 loads. The hauling has thus far been effected by a 16-horse-power engine, but another engine of 40 horse-power is now being erected, and will shortly be set to work. The new engine will haul 2,000 to 3,000 loads of blue per day with ease. Nearly 2,000,000 loads of blue have been opened out and are ready to be worked, while about an equal quantity is being opened out at lower levels, so that even if it raises 2,000 loads of blue per day, the company has a clear six years' work before it. These calculations, it should be added, are based upon an area of 200 claims now being worked underground; but the present ownership of the company comprises upward of 300 claims. The drainage of the mine is effected by a pair of horizontal geared pumps driven by an engine of 25-horse-power, and capable of lifting 15,000 gallons of water per hour. In the twelve months ending March 31, 1886, the company hauled altogether 391,747 loads of blue, and with this output it was enabled to pay a dividend of 12 per cent. upon a capital of \$1,045,120, although diamonds averaged during the year the unusually low price of 16 s. 4½d. per carat.



—Mr. J. F. Fradley sailed for Europe on April 18.

—Rothschild Bros. have removed to 51 Nassau street.

—Mr. Samuel Lawson has removed to 11 Maiden Lane.

—Mr. C. G. Malliet has removed to 64 and 66 John street.

—Mr. H. Didisheim arrived home from Europe last month.

—Mr. M. J. Lichtenberg has removed to 64 and 66 John street.

—Mr. A. Alling Reeves has removed to 21 and 23 Maiden Lane.

—Mr. G. L. Fox, of M. Fox & Co., sailed for Europe last month.

—Mr. E. Karelsen has removed to 95 Fifth avenue, corner of 17th street.

—W. D. McVitty & Co., Norwalk, Ohio, are the successors of Merry & McVitty.

—Mr. Albert Crouze, of Saunders, Ives & Co., arrived home from Europe last month.

—Mr. Sig. Hirschberg has removed to 78 Nassau st., where he occupies the entire first floor.

—Mr. Alphonse Walter, of Albert Berger & Co., sailed for Europe on April 21 on the *City of Chicago*.

—Mr. C. G. Alford, of C. G. Alford & Co., will sail for Europe with his family on May 2 on the *Trave*.

—The firm of E. E. Kipling, successor to E. E. & A. W. Kipling, is now at its new office, 182 & 184 Broadway.

—Mr. J. W. Johnson and the New York office of the Middletown Plate Company have removed to 22 John street.

—Mr. M. L. Roberts, of Fort Edward, N. Y., will start for the West about the 1st of May, to open a store in a new location.

—Mr. D. E. Oppenheimer, of Falkenau, Oppenheimer & Co., arrived from Europe March 31 by the *Trave*, after making some successful purchases in diamonds and precious stones.

—Mr. Ernest Zahm, Lancaster, Pa., will continue the retail business of his late father at the same place. This will be kept separate from the factory which Mr. Zahm himself established several years ago.

—The Roy Watch Case Co. has removed its office to 3½ Maiden Lane, where they have ample accommodations for their out-of-town customers who may wish to make their headquarters there while in the city.

—R. & L. Friedlander warn the trade against an imposter who claims to represent them as their traveler. The only persons authorized to sell goods for them are W. C. Lippus, Abe Harris, Louis C. Moss and Edward Kornfield.

—Fred. I. Marcy & Co. have removed their New York office to the Dennison Building, 198 Broadway, where Mr. J. M. Dayton can be found by his friends. He has an excellent line of samples to show in Acme lever buttons, and he reports an active demand for collar buttons.

—Ketcham & McDougall have removed to 198 Broadway, where they have a fine office on the third floor, front. They are having a good trade in their patented gold collar button, which is made without solder and is very strong and durable. In their well-known line of thimbles they are adding new patterns continually, and the engraving and finish as well as the designs, are artistic. One late pattern of thimbles is a variation in the style of top, from the conventional dotted pattern to a peculiarly engraved pattern. The design is very handsome and though it is not so useful as the older style, being only fit for light needlework and embroidery, yet it should find a ready sale. They certainly are an attractive novelty and should find a place in every stock of thimbles.

—J. T. Scott & Co. call attention to their large line of imported sky light watches, in gold, silver and nickel; also to their line of split and chronograph watches.

—Edwards & Lee, the successors of A. M. Edwards, 300 Main street, Buffalo, N. Y., are now fully equipped with an elegant stock and a beautiful store. They have sent out a pretty little announcement of their spring opening to their patrons.

—The American Manufacturing & Supply Company, of No. 2 Dey street, have issued a catalogue of their self-winding clocks. It contains illustrations and descriptions of the various styles in which the self-winders are made, and numerous testimonials as to their efficiency and satisfactory working. These clocks require attention but once a year.

—The Safety Eye-Glass holder, a patented article, made of fine, tempered steel, is a remarkably useful invention which jewelers and opticians can profitably handle and recommend. Its advantages lie in having no pin to stick into the clothes or get out of order, it is simple of construction, easy to attach, and holds the eye-glass safely and securely.

—The Waterbury Clock Company have vastly improved the appearance of their store at 10 Cortlandt st. It has had a thorough overhauling. New plate glass fronts have been put in, new brass signs without, and a handsome clock display within. The tables and interior woodwork have been stained a cherry color, which forms a pleasing contrast with the fresh line of clocks displayed upon them. A larger line of clocks is now displayed than was ever seen here before, and the assortment is unusually complete. Especially attractive is a line of about a dozen elegant hall clocks of antique and modern designs, which stand upon a small platform near the entrance.

—The engineer officers of the navy, in view of the importance of finding a substitute in cast metal for wrought steel and iron as applied to the complex parts of modern marine engines, are much interested in the result of recent comparative tests of common and aluminum bronze at the Watertown arsenal. The tests of ordinary bronze showed a tensile strength of 24,500 lbs. a square inch, with an elongation of 8.2 per cent. The aluminum bronze, known commercially as "A 3," cast in sand, exhibited a tensile strength of 53,000 lbs. and an elongation of 6.2 per cent., while the same metal cast in chilled molds resisted a strain of 67,600 lbs. to the square inch, with a total elongation of 13 per cent. In the opinion of naval experts these results show that the aluminum bronze compares so favorably with steel and wrought iron, that the last named metals will be displaced to a considerable extent in engine building, the greater cost of the bronze being overcome by the ease with which it can be cast into intricate patterns.—*Age of Steel*.

—Luther Bros., of Providence, have been succeeded by the firm of Wm. H. Luther & Son. Mr. Wm. H. Luther, who has been the sole proprietor for five years of the old firm, has admitted his son, Fred. B. Luther, into partnership, and the new firm will conduct the business in the same manner as before, with the Providence and New York offices unchanged. They make a general line of prize package and street jewelry, and a specialty with them is their campaign badges, which are always put upon the market within twenty-four hours after the candidates are nominated. They have a large factory, occupying three buildings, in which they manufacture all their goods, including the pasteboard boxes, jewelry cards and other supplies. Their establishment is well systematized, and enormous quantities of cheap jewelry are turned out in remarkably short time. At the present time they are engaged upon presidential campaign goods for the coming fall, of which barrells are already completed excepting the name, initial or photograph of the coming presidential candidate. These can be filled in within a day after the nomination has been made, and two days afterwards will be hawked all over the streets of the large cities.

—Goodman & Rosenberger have removed to 34 Maiden Lane.

—G. E. Luther & Co.'s New York office has been removed to 26 Maiden Lane.

—Mr. N. Kauffman, of L. V. Citroen & Co., sailed for Europe April 21 by the steamer *Burgoyne*.

—Mr. Murray M. Harris, of M. M. Harris & Co., Los Angeles, Cal., was married on April 16 to Miss Helen Field.

—Mr. H. H. Heinrich, of 16 John st., reports a fair demand for chronometers. His new idea of renting them at \$5 per month has been very successful.

—Our Providence correspondent sends us this month an extremely interesting letter. "Down East" subscribers will find it very interesting as well as profitable reading.

—It gives us pleasure to announce to his friends that Mr. Tell A. Beguelin has fully recovered from the effects of his recent accident, whereby he sprained his foot.

—Mr. A. E. Lavigne, the popular young salesman with Mathey Bros., Mathez & Co., celebrated his thirty-sixth birthday on April 12. He has been with this firm twenty-two years.

—H. M. Smith & Co., of 81 Nassau street, are the wholesale general agents for the Paul E. Wirt fountain pen, which has the reputation of a first-class pen among the trade. It is having a ready sale.

—S. F. Myers & Co. have purchased several entire lines of discontinued staple clocks, which they are offering to the trade at unusually low figures. They are fully illustrated in their circular. The Globe filled watch case, of which they are the sole agents, has met with unusual success.

—Mr. C. S. Raymond, of Omaha, Neb., recently had trouble with the combination of his safe. The lock became disordered by the detachment of a nut inside, and it required an experienced safe-maker more than a day to open it. The safe was very much damaged in the operation.

—Mr. G. Robert Linke, of Westminster street, Providence, R. I., has had a boy arrested upon the charge of stealing small articles of jewelry from the store. The boy had been in Mr. Linke's employ for nearly a year, and until lately had been regarded as strictly honest. His name is Harry Johnson.

—The Pairpoint Manufacturing Company will retain their New York salesroom at 20 Maiden Lane, and during the coming summer may make several improvements in the arrangement of fixtures. Their stock of plated ware is up to their high standard, and the new patterns now being shown are very salable.

—Oppenheimer Bros. & Veith are offering the 4 and 6 size movements made by the Columbus Watch Co., at greatly reduced prices. As they have purchased the entire line they are enabled to offer them at low prices, and the movements are still guaranteed by the Columbus Watch Co., which claims for these movements a superior grade of finish and quality.

—Henry T. Spear & Son have sent a circular to the trade announcing the dissolution of the old firm upon the death of the late Henry T. Spear, and the re-organization of the firm under the same name. The new firm is composed of Messrs. Daniel B. Spear and Austin T. Sylvester, and the business will be continued unchanged. Mr. Parker Ridler continues in the position he has held for many years.

—Rogers & Brother report trade active for this season of the year. The "Assyrian" pattern of flat ware is proving one of the most popular they have introduced in some time. In flat ware, and also in hollow ware and in novelties, they are putting new designs on the market continually, which the trade will find it worth while to investigate. Attention is called to the attractive advertisement of this firm in another part of this issue.

—Mr. I. Emrich, 66 Nassau street, has admitted Mr. I. Schorsch into partnership, and the new style is I. Emrich & Co.

—Mr. Charles S. Crossman, of 61 Nassau street, and Doughty & Co., 23 Maiden Lane, have consolidated their business, which is now being carried on at 23 Maiden Lane under the style of Chas. S. Crossman & Co. They will carry a full line of watches, diamonds, and jewelry, and the same careful attention will be given to fine watch repairing and adjusting as heretofore.

—Hamilton & Hamilton, Jr., recently sent out a novel kind of a circular to advertise their popular lines of chain. It was printed upon coarse brown paper, rolled up in a miniature cloth shawl. A very small shawl strap was strapped around the little bundle, and this little article has created quite a sensation. Messrs. Hamilton report a very fair trade. They continue to have a large demand for their famous 14-k. filled chains, and their "Tiger" brand of plated chains is having an unprecedented run.

—Mr. Charles D. Pratt, of the Chas. D. Pratt Co., fancy goods dealers, sailed for Europe on the 25th of April to buy in a line of new goods for the coming fall. Last year his trip to Europe was remarkably successful, he having penetrated beyond the regular German and Vienna markets and purchased from houses unknown to many American buyers. In this way he secured novelties such as had never been imported before, and these met with a very ready sale last fall. The jewelry trade patronized his firm largely.

—Attention is called to the price list published by Mr. N. J. Felix which appears in the advertising pages of this issue. Mr. Felix has one of the most complete establishments for the repair or alteration of watch cases, etc., and his workmanship is of the highest class. His price list, therefore, is worth careful preservation by jewelers who send any of this class of work to New York, as the prices quoted are for the best character of work. Mr. Felix also pays special attention to fine lapidary work, including the cutting and polishing of diamonds and precious stones.

—Mr. George W. Parks, one of the popular salesmen for Howard & Son and The Sterling Company, is making his regular western trip. The goods of Howard & Son are as popular as they are well known, and the new designs of this season are not behind those of former seasons, when this firm were achieving great distinction by their original patterns. The "Cute" cuff clasp is one of the latest improvements in the way of fastening ladies' cuffs to the sleeve. The Sterling Company are also in the field with a novel line of silver goods, and Mr. Parks should have an easy time to write big orders.

—The removal of the house of Mr. Leon J. Glaenger to 80 Chambers street was completed during last month, and the new establishment is fitted up in a style befitting the importance of the house and the beautiful line of goods they carry. They occupy the entire building, and upon the different floors the various lines of goods are arranged with excellent taste. The fittings and decorations of the several show rooms are in French style. The upper floor contains the samples of druggists' sundries and small articles of fancy goods. Porcelain and glassware of finer grades are also shown here. Upon the next floor below are several show rooms for the elegant pieces of bronze statuary, onyx pedestals, large ornaments, etc. Two large rooms, one at either end of the building, are lighted by windows, and the center room is lighted only by gas. The effect of this center room is superb. The walls are decorated in rich red, which set off the goods in a most elegant manner. Upon the floor below are the business offices and the show room for clocks. This house carry a most complete stock of French clocks of finest quality. These extend in price from quite low to very high. While they are all of fine quality of movement and best grade of finish, the lower priced ones are very cheap for the prices asked, while the expensive ones are of elegant workmanship and decoration. There are also shown a line of onyx clocks, and also a line of gilt regulators and ornamental gilt clocks with mantel ornaments to match.

—The following named dealers were noticed in town during last month: H. L. Spier, Baltimore, Md.; C. H. Wenhold, Bethlehem, Pa.; P. E. Wirt, Bloomsburg, Pa.; L. Emery, Jr., Bradford, Pa.; Jos. B. Mayer, Buffalo, N. Y.; C. M. Turck, Butte City, Montana; A. Hotchkiss, Cheshire, Conn.; F. E. Morse, Chicago, Ill.; J. M. Chandler, Cleveland, O.; J. Goodman, Columbus, O.; J. H. Fairtori, Danbury, Conn.; J. J. Joslin, Denver, Colo.; E. J. Smith, E. R. Roehm, Detroit, Mich.; A. La France, Elmira, N. Y.; C. Jarecki, Erie, Pa.; D. H. Buell, H. A. Deming, Hartford, Conn.; W. G. Bailey, Helena, Montana; H. Diemel, Herkimer, N. Y.; D. P. Erwin, Indianapolis, Ind.; E. Zahm, E. F. Bowman, Lancaster, Pa.; A. Camp, Milwaukee, Wis.; W. H. Weld, Minneapolis, Minn.; G. H. Ford, New Haven, Conn.; J. C. Dueber, Newport, Ky.; J. C. Woelfle, Peoria, Ill.; Otto Heeren, O. C. Ganter, M. Bonn, J. R. Dilworth, J. R. Reed, Pittsburgh, Pa.; E. H. Merrill, Portland, Me.; F. Strouse, Pottsville, Pa.; J. H. Muegge, A. J. Lewis, San Francisco, Cal.; L. S. Stowe, Springfield, Mass.; T. B. Myers, St. Paul, Minn.; A. S. Mermod, St. Louis, Mo.; D. McCarthy, Syracuse, N. Y.; G. M. Bailey, Uniontown, Pa.; F. Moore, Washington, D. C.; H. E. Eckert, West Troy, N. Y.

—Mr. Chas. V. Peyn has removed to 10 John street.

—Wm. M. Fisher & Co. have removed to 176 Broadway.

—Mr. M. Falkenau, of Falkenau, Oppenheimer & Co., sailed for Europe last month.

—Mr. Charles E. Temple, of C. E. Temple & Co., Boston, died on at West Roxbury, April 22. He was sixty-five years of age, born in Princeton, Mass.

—Mr. Joseph F. Chatellier has removed his office to the northwest corner of Broadway and Seventeenth street. His factory will remain in the old location, No. 6 State street.

—The Lee Hotel Fire Escape Co. is having a good sale in the "Lee Portable Fire Escape," which is designed for the use of travelers. They are very convenient, compact and light, and commercial travelers not only in the jewelry line, but in all lines of business will find them better than a life insurance policy if they ever have occasion to use them. They are convenient, simple of action and quickly made ready for use, and in view of the fact that many hotels are not provided with fire escapes, they are a positive necessity to a traveler. See the illustrated advertisement in this issue.

—The Leroy W. Fairchild Co. are showing this season a larger and more varied line of novelties than ever before. The line now includes pocket knives, flasks, match boxes, paper cutters, charms of many kinds, toothpicks, pencils, etc. Of these, the larger part are in silver: plain, chased, oxidized, etched, etc. Some are in gold and others in gold and silver combined. The designs are fully up to the high standard for which this firm have made a name and the finish is excellent. The gold pens made by this firm are meeting with a steady demand, and orders are being received constantly for them from all parts of the world. The firm announce that they will hereafter patent all their designs in novelties so that they may not be copied by their competitors.

—The Non-Magnetic Watch Company have just put upon the market a line of low priced non-magnetic movements, containing Paillard's celebrated inventions. These movements have long been looked for by the trade, and it is expected the demand will be large. A new price list is issued on May 1 by the company, which can be had upon application. Mr. C. W. Ward, general manager, and Mr. A. C. Smith, business manager of the Non-Magnetic Watch Co., arrived home from Switzerland on April 22, after having visited the Geneva factories. They report the company to be in a flourishing condition, with the factories running to their fullest capacity. They say the demand for their watches has been large, but that they expect to sell very large quantities of the cheaper grades which have just been put on the market.

—Henry E. Beguelin and George C. White, Jr., were elected on April 2d, directors of the Home Insurance Company, of New York, the largest fire insurance company in the city.

—Mr. George T. Sadtler, the senior member of the firm of Geo. T. Sadtler & Sons, Baltimore, Md., died on April 18 of heart disease. His death was very sudden and has been a severe shock to his family and friends. Mr. Sadtler was born in Baltimore in 1821, and was the eldest son of P. B. Sadtler, the founder of the present firm. This house, dating back to the year 1800, has had an honorable record, and the late Mr. Geo. T. Sadtler was highly respected.

—Mr. Jacob Singer, of Toronto, Ontario, was recently made the victim of a very clever swindle, involving about \$10,000. A woman offered to sell him \$11,000 worth of bonds for \$10,000, and after Mr. Singer had made inquiries and investigated her title to them to his own satisfaction, he bought them. Shortly afterwards it was discovered that the bonds had been stolen, and the police have taken possession of them. Mr. Singer has obtained an injunction restraining them from delivering the bonds to the true owner, and will try to regain possession of his own money, on the ground that he used every precaution before buying the bonds.

—The old firm of Miller Bros. has been reorganized under the new name of Miller Bros. & Co. Messrs. James W. Hagen, William R. Jackson and Eugene G. Miller have been admitted into the firm. Messrs. Hagen and Jackson are well known and very popular travelers, and have been traveling for Miller Bros. for twenty and seventeen years respectively. They will continue to travel over their old territories, and are now off on their spring trips, Mr. Hagen, West, and Mr. Jackson, South. Mr. Eugene G. Miller is the son of Mr. Jas. W. Miller, one of the founders of the firm. He will take charge of the diamond department which is becoming more and more a prominent part of the firm's business. Miller Bros. & Co. are showing a large line of novelties in fine jewelry, in designs which are strikingly original. In initial goods, for which the old firm had a reputation, the line is kept the same, with new patterns continually being added.

—Max Freund & Co. are exhibiting to the trade some samples of what are termed "reconstructed" rubies. They are of various sizes, but so perfect in appearance that excellent judges at first pronounce them to be natural stones. The firm also shows samples of these rubies uncut. Many attempts have been made to manufacture rubies, and some of the experiments have been successful on a limited scale. On February 27 M. Fremy reported to the Academy of Sciences at Paris that he had been able to produce some small specimens of rubies, which he exhibited, announcing that he should continue his experiments, assisted by M. Verneuil. Those exhibited by Freund & Co. are produced by a different process, and are said to be the finest ever manufactured. If there is a demand for them, the firm has arrangements that will enable them to supply it. These "reconstructed" rubies are by no means cheap productions, but are costly to produce, although much less costly than natural stones.

—Mr. Frank N. Reeve, traveler for H. Elcox & Co., died on April 17 while on his way home from Chicago. Mr. Reeve was a well known man and was very popular. His many friends will be shocked to hear of his death, which was a particularly sad one. He had been in very poor health for a long time, and in January spent a few weeks in the West Indies whence he returned seemingly in much better health, though he was not a strong man, his complaint being consumption. Early in April he started on his western trip, but his health began to fail before he reached Chicago and he decided to return. He telegraphed his firm to that effect, and also sent another despatch from a town in Ohio, asking to have some one meet him on his arrival in Jersey City. He must have been in a very low condition when he sent this last despatch, for he died on the train ten miles out from Pittsburgh. His body was brought to New York by Mr. S. F. Roberts, of Pittsburgh. Mr. Reeves leaves a mother and two sisters who were dependent upon him.

—S. & B. Lederer will remove to 202 Broadway.

—R. Longman & Sons will remove to 8 John street.

—Ferd. Fuchs & Bro., silversmiths, have removed to 136 to 140 West 23d street.

—Mr. J. Eugene Robert sails for Europe on the *Adriatic* May 2. He will be accompanied by his family, and will spend most of his time in Switzerland enjoying a much needed and lengthy rest.

—Mr. J. H. Johnston, the well-known jeweler, of 150 Bowery, has removed up-town to Union Square. He occupies the store opposite Tiffany's, where the Bank of the Metropolis formerly was.

—Mr. L. C. Champney, one of the oldest jewelers in Troy, N. Y., has sold out his business to Mr. Wm. C. Seaton, who was formerly located on Broadway. Mr. Champney intends to go to Costa Rica.

—Mr. R. Henrich, 35 Maiden Lane, has admitted Mr. Alonzo Graves into partnership, under the style of Henrich & Graves. Mr. Graves was formerly of Morristown, N. J. We wish the new firm success.

—Fleury, the former postmaster of Paso del Norte, Mexico, who robbed the mails of large quantities of diamonds, and afterwards escaped from jail where he was awaiting trial, has at last been recaptured, together with his accomplice, O'Farrell, formerly his chief clerk in the post office.

—Mr. Anthony Hessels, formerly of 45 John street, where he carried on the business as cutter of diamonds, etc., has opened a retail jewelry store up-town at 330 Fifth avenue. He will there continue the manufacture of jewelry, including his improved patented collar button.

—The Wiesbauer Manufacturing Company, of Buffalo, manufacturers of jewelers' findings, have prepared nests of paper boxes, each one of which contains a handsomely printed view of some attractive feature at Niagara Falls. They are very desirable for jewelers' uses.

—Mr. Jas. C. Metcalfe will take charge of the New York store of Simpson, Hall, Miller & Co., at 14th street and University Place, which is rapidly nearing completion. Mr. Metcalfe is a gentleman well known to the trade, having been with the Meriden Britannia Co. for over 10 years.

—The co-partnership of H. Muhr's Sons, composed of Messrs. Simon Muhr, Joseph Muhr and Jacob Muhr, was dissolved on March 31st, and a circular of the same date announces that the new co-partnership of H. Muhr's Sons, composed of Messrs. Simon Muhr and Jacob Muhr, will continue to carry on the business formerly done by the watch, jewelry and diamond departments of the late firm, and that Mr. Joseph Muhr has purchased and will continue under his own name, the manufacturing jewelry department of the late firm. The addresses of the two houses will be the same as before, both in New York and Philadelphia, except that Mr. Joseph Muhr will have his New York office at 18 Maiden Lane.

—C. G. Bloomer & Son, Pawtuxet, R. I., have completed their plans for a new building to be erected on the site of their old factory recently destroyed by fire. The dimensions will be 75x35 feet. It will be a two-story wooden building with a basement larger than the former one, being lengthened under the entire building. The building will be fifteen feet shorter than the old one, but in compensation for this a tower will be erected in front to serve as an entrance for both stories. The arrangements will be nearly the same on the first floor, but in the basement some changes will be made. A chimney will be erected at the center of the rear wall of the shop, and the boiler and engines will be put in a building by themselves at the northeast corner of the shop. This will decrease the danger of fire. The second floor will be fitted up so that it can be used either as a hall or for one large or two small manufactories. Sufficient power will be furnished to run these. In the office a brick fire proof vault will be built, which will also extend into the second story. Should the town fail to furnish sufficient fire apparatus, Mr. Bloomer will have a hydrant placed midway between the shop and his cottages with hose sufficient in size and length to protect his property.

—Mr. Henry Carter has removed to 198 Broadway.

—The Brooklyn Watch Case Company recently came near losing a lot of gold bullion worth \$5,000. The bullion was in ten bars, eight of gold and two of silver, and these were enclosed in a canvas bag. They were dropped somewhere between the Assay Office in New York and the factory of the company in Brooklyn, and their loss was not immediately discovered. A driver of a dirt cart happened along Third avenue in Brooklyn, where they were lost, and picked them up, not knowing their value, and he left them with a lot of Italians who were at work where he dumped his dirt. The Italians did not discover the nature of the bars, and began to use them in a game of quoits during lunch hour. Their employer, James W. Buckley, however, who came shortly afterwards, recognized their value and took them from the Italians, with the exception of one, which one man had secreted upon his person while his employer was collecting the rest. The next day appeared an advertisement in several Brooklyn papers, advertising a reward for the return of the lost bullion, and Mr. Buckley returned them at once, receiving the reward. The other bar was not immediately recovered from the Italian, but subsequently he was arraigned before the court on suspicion, and the bar was afterwards found in his lodging and returned to the owners, the Brooklyn Watch Case Co.

—When the French crown jewels were sold by auction last season, it is well known that the finest and most historical of the gems, including the famous "Regent" diamond, were reserved, and these may now be seen in the Louvre in the gallery called after the well-known statue of Apollo, which is such a prominent object in it. Before these priceless gems were exposed, however, a committee of skilled officials and experts was appointed in order to decide on some plan for rendering their loss by theft virtually impossible. And this is what the committee decided upon: The jewels are exhibited in a showcase, the glass plates of which are exceptionally thick and the iron framework of which is abnormally strong, and an attendant has been appointed to specially keep watch over the precious exhibit all day long. Should he have the slightest cause to suspect any visitor or visitors, he has only to touch a button easily within his reach, whereupon the glass case promptly disappears from view and sinks into a specially constructed shaft, over the top of which the same automatic machinery causes thick covers, formed of thick metal plates, to close with a sharp snap. The ingenuity displayed in carrying out this plan is remarkable, and the fact that the clock-work apparatus has cost close upon £800 will convey some idea of its complicated character.

—The Spencer Optical Mfg. Co., are very busy filling orders from their most complete stock of optical goods. Attention is called to their advertisement in this issue, in which appears an illustration of a new design in Lorgnettes. These are very fashionable nowadays, and command a ready sale among society people. They can be had in gold, tortoise-shell and celluloid. Another good selling article with the Spencer Company is the Audemairs' complete sets of trial lenses; large numbers of them have been sold, and every optician should have one of these conveniences in his store. They can now be had at such reasonable figures that no one who makes a pretence of fitting glasses can afford to be without one. They are made in fifteen different styles, and contain the new improved trial frames which are far superior to older styles. The lenses are furnished either without rims or with metal or celluloid rims. The Spencer Company recommend the celluloid rims on account of their durability and strength. They can be dropped on the floor without harm, while the metal rims are liable to break and the rimless lenses become scratched. The celluloid rims and eye-glass frames used by this company are recommended very highly, not only because they are elastic and strong, but also because where they are colored in imitation of tortoise shell, they retain their colors forever. The colors of some goods in this line, said to be made of celluloid, but which are imitations, fade after remaining in stock a short time, but these goods always keep their freshness, and the colors remain unfaded.

—F. M. Whiting & Co., of North Attleboro, Mass., have opened up an office in the building at the northwest corner of Broadway and 17th street, where they will keep a full line of their novelties in silverware, silver jewelry, etc. Their line is unusually full this season and dealers will be repaid by a visit to their office.

—Mr. W. S. Mills, of Fillmore, N. Y., has in his possession a peculiar watch. It is nearly round, double cased, and the outside is covered with a queer green substance, put on with vivits around the edge of the case. The movement is marked "Tho. Tompion, London." If any of our readers know anything about this man and the date when he made watches, Mr. Mills will be glad to hear from them.

—We were recently shown a very elegant Masonic decoration manufactured by Mr. John F. Luther, 89 Nassau street. It is made of solid gold in the form of a medal, suspended from gold bars and embracing various Masonic symbols. This is a presentation jewel given by Robert Lee Lodge No. 40, Staunton, Va., to Past Master Arista Hoge. In workmanship and intrinsic value, it reflects great credit upon both the manufacturer and the donors. Mr. Luther makes a specialty of fine work of this kind.

—E. Ira Richards & Co. continue to make their goods only of the highest quality, notwithstanding the large demand in some quarters for low grade, cheap plated jewelry. This firm have long been known for the high character of the quality, finish and designs of their goods, and they have their reward in a large and steady sale for mostly everything they produce. Retail dealers who handle plated jewelry of fine quality only and reject the kind that has no wearing quality, buy much of E. I. Richards & Co. New designs by the score are shown for the coming season.

—Hirst, Moore & White, Limited, on the 17 of March last, by a vote of a majority in number and value of interest of its members, determined to dissolve. Messrs. Joseph H. Watson, W. Storer How and Robert D. Maxwell were elected liquidating trustees to wind up the concern and distribute the net assets thereof among the members and others interested therein. Mr. L. P. White, son of Mr. J. W. White, will continue business on his own account in the office of the late firm. He has secured the exclusive control for Philadelphia and the surrounding country of the Dueber and Hampden productions. Mr. Charles S. Hirst contemplates going into the diamond business in Philadelphia, and Mr. John R. Moore has gone into the dental business in Wilmington, Del.

—After the adjournment of the regular business of the New York Academy of Sciences, April 17, the members interested in mineralogy held a meeting for the purpose of establishing a section on mineralogy. This section will meet when enough interesting material presents itself before the New York Mineralogical Club to insure a full evening of business. It will publish all papers presented before the Mineralogical Club in the proceedings of the Academy. Mr. George F. Kunz was elected President, and Mr. J. H. Caswell, Secretary of the section. Mr. George F. Kunz delivered a lecture on "Precious Stones During the Last Decade" before the Boston Society of Arts, at the Massachusetts Institute of Technology, on Thursday evening, April 26.

—Mr. E. A. Thrall returned from Europe a few days since, where he spent several weeks looking for goods to supply his special trade. He picked up some fine specimens of artistic jewelry which he will have on exhibition at an early day. He has already received, however, some packages of precious stones which he selected himself, and they are certainly very choice. Among them are diamonds, rubies, pearls and sapphires of various sizes, but all of first quality. Mr. Thrall paid an extra price for the privilege of selecting these goods, and as a consequence every gem is perfect. He says that pearls and opals, surrounded with diamonds and other stones, are now generally worn by ladies in Paris. Having become fashionable, pearls and opals have advanced in price considerably lately. While his purchases were mainly for the trade, he will mount some of these gems in special designs.

—Albert Lorsch & Co. had an encounter with a couple of clever swindlers last month. A man named Morris, who had made several cash purchases there at previous times, stepped in their store one day with a companion and picked out a bill of goods amounting to \$489. He then filled out a check for \$500, which, instead of tendering to Lorsch's clerk after the style of common swindlers, he gave to his companion to get cashed at the bank. He told the clerk he would wait until the return of his partner with the cash. After waiting awhile, Morris acted as if he were impatient at the delay of his pretended partner, and then explained that he had some other business that must be attended to at the Custom House before closing hours. He then asked the clerk to allow him to take the goods with him, and said that his partner would be there shortly and pay the bill. The clerk let him have the goods, and this was the last seen of Morris until several days later, when he was arrested by the police, who had been notified by Albert Lorsch & Co. of the swindle. The partner of Morris has not been found, he having probably received warning by the premature publication of the matter in the daily papers. The goods, however, were recovered.

—The science of electricity, yet in its infancy, has a number of ably edited journal devoted to its interests, whose editors are wide-awake to everything of interest in their field. Under the caption, "Common Sense Applied to Watches," *Practical Electricity* expresses its belief in practical time keeping, and takes a practical, common sense view of it. Here is what it says: "We believe in protection, when it comes to a watch. The question of a well-made, practically perfect watch has been solved, and any attempted distinct improvement in the internal construction of a watch, to avoid the effect of nature's laws, will be very short-lived. What is wanted to-day in the business of time keeping is protection for already invented timepieces, and not a revolution in the construction of timepieces. The substitution of a new metal for an old one, simply because it is in itself non-magnetic, is not going to solve the problem. There are other more important facts in physical science, which must be taken into consideration. We buy a watch for a lifetime, not for a day. We believe in the anti-magnetic shield, in protection for what has already been proved to be practically perfect, in the requirements of the science of horology."

—Mr. Samuel C. Tappin and Mr. F. W. Sim, of Troy, N. Y., were recently swindled by a very clever trick. A stranger in the garb of a clergyman called at the jewelry store of Mr. Tappin about 1 o'clock and asked to be shown diamonds. He represented that he was a student at St. Joseph's Provincial Seminary. He stated that his sister was about to be married, and that he was making selections of diamonds to present to her as a wedding gift. The most valuable stones in the store were displayed, from which the stranger selected a pair of ear rings worth \$350. After making the purchase he asked that the goods be packed and sent to the Provincial Seminary. He gave his name as Thomas Harvey. He next called on Frederick W. Sim. Here he repeated the same story, and selected a pair of ear rings valued at \$400. Harvey then went to the seminary. He rang the door bell and asked the servant who responded whether Dr. Gabriels, the President, was at home. A negative answer was given, whereupon Harvey said that he would wait for the return of the doctor. In the meantime Mr. Sim, whose suspicions had been aroused, decided to take the goods to the seminary personally. He inquired whether there was a person at the seminary by the name of Thomas Harvey, and was informed that there was. Mr. Sim was shown into the office where Harvey was engaged writing. The alleged priest told Mr. Sim that he would be through in a few minutes and would then attend to him. In the meantime he asked him to examine the pictures and bric-à-brac in the room. When Harvey had finished writing he drew a check on the Union Bank for the amount of his purchase and gave it to Mr. Sim, who accepted it, as did Mr. Tappin a second one. They were both found to be worthless, but not until after Harvey had politely left the seminary, promising to call again at a later hour, which, of course, he did not do.

—Mr. L. Stern, of Stern Bros. & Co., sailed for Europe last month.

—Mr. N. Kauffman, of Vve. L. B. Citroen & Co., sailed for Europe last month.

—The Southington Cutlery Co. have removed to 98 Chambers street, near Church street.

—Mr. Cottier, of C. Cottier & Son, sails for Europe by the French line of steamers on the 12th inst.

Stern & Stern are now in their new store, No. 13 Maiden Lane, which has been elegantly fitted up.

—Wade, Davis & Co., of Plainville, Mass., have removed their New York office to the Dennison Building, 198 Broadway.

—Mr. Albert Wittnauer, of J. Eugene Robert & Co., returned from Europe last month after an absence of more than a year.

—The Bradley & Hubbard Mfg. Co. have issued a small book containing representative illustrations of their line of bronzes, art metal goods, clocks, ornaments, gas fixtures, lamps, etc. It can be had upon application.

—Mr. Max Klinkowstein, of Elbe & Klinkowstein, recently obtained authority from the Court of Common Pleas to assume the name of Max H. Kling. The name of the above firm has consequently been changed to Elbe & Kling.

—The "Beaded Label" watch glasses are meeting with favor among the trade. They possess many advantages which will be found described in the advertisement in this issue. Jobbers will recognize in these glasses the same qualities as in those which were made forty years ago by the famous Avril of Lorraine, Switzerland. The present manufacturers are the successors of Avril, and the glasses have been improved since his time. Dealers can procure the "Beaded Label" glasses of all jobbers.

—Burt & Hurlbut, of Detroit, Mich., failed last month, shortly after having been robbed of over \$7,000 worth of diamonds. They explained that their suspension was due to this heavy loss, and to recent large expenditures which were made necessary in refitting their establishment. In a circular to their creditors on April 7, they acknowledged an indebtedness of \$45,000, and estimated their assets at about the same amount. But they made an offer of only 25 cents cash, which they say will be supplied entirely by some of their friends who will buy the business, and let Burt & Hurlbut run it either with an interest or as managers.

—The Newark Watch Case Material Company have placed upon the market a novelty in the way of a protection for watches against magnetism. It is a small case made of metal, covered on the outside with Russia leather and lined inside with velvet. The case is made to fit the several standard sizes of watches. It covers the watch completely and closely, and only the pendant and bow are left exposed. The case is provided with a weak spring, which will open by the action of the case spring if a hunting watch; at the same time it clasps the watch closely. Watches placed in these cases have been tested with strong magnets without showing any of the evil effects of magnetism. It is neat, compact and convenient, and its uses are so commendable that it should meet with a large sale. An illustration of this useful article appears in the company's advertisement in this issue.

—Wm. Wise & Son, of Fulton st., Brooklyn, during the Easter season, had one of their show windows arranged in a manner as strikingly novel as it was artistic and beautiful, and the thousands of persons who saw it were delighted at the sight. The window contained a miniature lake of clear water in the center, with a gravel bottom, and a few gold fish could be seen swimming about between the miniature rocks and water lilies. The lake was surrounded with natural earth and mosses, covered with beautiful flowers and leaves from the hot-house, freshly cut. These were kept watered, and in the centers of many of them were loose diamonds, looking, for all the world like drops of dew. Enamelled flower brooches were interspersed between the natural flowers, and in many instances, could hardly be distinguished from them. The little scene was like a glimpse of fairyland, and the glitter of the dew-like diamonds attracted the long and untiring gaze of the passer-by such as the richest jewelry could never have done. Messrs. Wise & Son are to be congratulated upon the success of their artistic exhibition.

—Hon. Albert C. Titcomb, late of the old firm of A. C. Titcomb & Co., San Francisco, Cal., who recently returned to his native town, Newburyport, Mass., is reaping the rewards of an honorable life in a flattering degree. He was elected an alderman of Newburyport, shortly after his return, and upon the death of the mayor of that city, was unanimously elected to fill the vacant chair. His public spirit

is recognized by all the citizens of the place, and the local press speaks in high terms of him. When the late Mayor Huse died, Mr. Titcomb was immediately talked of as his only fitting successor, not by politicians alone but by all his fellow citizens. His side in politics is not questioned; indeed it is not known, and his election to this office was made only from a knowledge of his peculiar fitness for it. The local papers give short sketches of his career, and we reprint the following from the *Newburyport Daily News*: "Albert C. Titcomb, our new Mayor, is one of our most wealthy citizens, and as free and generous as he is wealthy. After an absence of more than twenty years, loving the old town, he returned for permanent residence; already interested largely in our industries, and is ready for further movements. He is a 'self-made man,' was clerk in a store on State street, when he was 13 years old, and in 1849 he worked his passage to California, went down to Relajo, Central America, where he ran a hotel and was financially broken by a change in the route of travel across Nicaragua, and home again before he was 20. He was not discouraged by adversity, but learned a machinist's trade in the Bartlett Mills, and after that was in the watch and jewelry business at the South, where at the outbreaking of the rebellion he had a stock of \$30,000 confiscated. Later on he was in the same trade in the West Indies and South America, and after paying for his losses at the South in gold when it was at a high premium, he again embarked for California, where thrift followed honorable business, and he returns to spend the remainder of his life in his native town."

—About eight years ago J. Cassils, of the firm of Shaw Brothers & Cassils, wholesale leather merchants of Montreal, bought a large old-fashioned safe from a second-hand dealer. One of the small drawers in the safe was locked, but as the dealer said it was locked when he got it some two years before, and as the person who sold it to him said it was empty and he had lost the key, he gave it no more attention, and the safe was sold as it stood. Recently, Mr. Cassils bought a new safe, and out of curiosity the locked drawer was forced open, and carefully wrapped in jewel wadding was found a tray containing a diamond necklace, bracelets and a large number of unset stones. Tracing the old safe was not an easy matter, but the following seems the solution of the story: Twelve years ago H. A. Mellor did a large business in diamonds and jewelry on Notre Dame street, Montreal, but he suddenly disappeared, and on his store being seized it was found that almost everything of value had been disposed of. Developments showed that but very few jewelry houses in Canada had escaped, while several English diamond dealers were caught. Nellie Bastine was at that time a notorious woman in Montreal, and with her Mellor made his escape to the United States and settled in St. Louis, where he finally dropped out of sight. Shortly after Mellor's disappearance, Mrs. Mellor and her sister were on their way to the United States. Their trunks were subject to thorough search, and it was found their sides and bottoms were lined with thin sheets of gold, over which had been pasted the paper lining of the trunks. All the jewelry in the store had been unset, the metal melted into sheets and the gems stored away. A great many diamonds were found concealed in their dresses. Notwithstanding these proofs, Mrs. Mellor and her sister were not found guilty at the trial. There was a good deal of speculation as to what became of one magnificent diamond. Many of the jewels were afterward traced but this one was given up as lost. It has at last turned up in the old safe.

THE WORKING DESIGNS.

Our artist's designs upon the tissue supplement again contains some original ideas in the manufacture of jewelry. Number 2 is a bracelet formed of links which are hinged together in the peculiar manner shown. Number 3 is a ladies' collar button, with small attaching pins and chains. Number 4 is a design for a bouquet holder, the front of which opens out separately from the pin; in the design the bouquet can be inserted or removed without unfastening the pin from the dress. The two designs numbered 8 show new ideas for catching the wires of ear knobs. The upper design is a simple groove in the ear wire into which the lower wire catches securely. The lower design is an improvement over many styles of screw ear knobs. In this design there is a simple hole in the center of the nut to receive the wire, and the nut is provided with a stiff spring which catches the ear wire at the point shown.



THE JEWELERS' CIRCULAR

AND

HOROLOGICAL REVIEW.

OFFICIAL REPRESENTATIVE OF THE JEWELERS' LEAGUE, THE NEW YORK JEWELERS' BOARD OF TRADE, AND THE JEWELERS' SECURITY ALLIANCE.

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THE JEWELERS' CIRCULAR PUBLISHING CO.,
189 BROADWAY, NEW YORK.

Advertising rates made known on application.



A full Index to Advertisements and Table of Contents will be found on Page 5 of this issue.

AT a recent art sale in this city, some goods had been received without the descriptive catalogue that should have accompanied them. Among them were some elegant rock crystal and agate scent bottles. As the auctioneer had nothing to guide him regarding these, he announced that he would not guarantee them? Of course, this threw a damper on the bidding, for few of those present were capable of judging of the goods for themselves, and so a fortunate dealer bid them in for a song. He had no hesitancy in guaranteeing them, and made several hundred dollars on his purchase. If one has the time to look about, great bargains in bric-à-brac can be picked up in this city occasionally.

THE RAGE for decorative articles in brass is increasing. A large industry in this line has been developed within the past few years, and some really beautiful as well as useful articles are now made in this material. The modern craze for decorated brass goods had its origin in England, but American workmen have gone so far in advance of them that nearly every out-going steamer takes

an invoice of these brass goods for which there is such a large demand abroad. Many articles in brass in the nature of bric-à-brac are deserving of a place in the stock of retail jewelers, and would contribute greatly to beautifying their stores, rendering them attractive and adding something to the profits of the business.

THE FIRM of R. & L. Friedlander experience considerable trouble in counting the number of teeth of broken wheels which are daily sent them to be matched. It consumes considerable time, and as can well be imagined, requires a good deal of patience to do this work properly. They are anxious to find some tool or machine that will perform this work. As an incentive to inventors who desire to relieve them of this bother, they offer a cash prize of \$25.00 to the one who will send them before the 1st of August a tool which will register the number of teeth a wheel contains. It must count the number of teeth in perfect and imperfect wheels. The firm will put no conditions or obstacles in the way of inventors, as they are very anxious to find a tool that will do this work perfectly. Address all letters to R. & L. Friedlander, 65 & 67 Nassau street.

ACCORDING to Chinese traditions, jade represents the nine highest virtues of man. These are benevolence, represented by its smoothness; knowledge, by its glowing polish; justice, by its inflexible solidity; virtuous activity, by its modest inoffensiveness; purity, by its rareness and spotlessness; veracity, by its showing the slightest scratch; moral stamina, by its unsurpassed beauty; music, by its beautiful sound when struck. The sound vibrations of jade do not die away softly, like those produced by the metals, but abruptly. The Chinese use jade in almost every conceivable way in the manufacture of articles of ornamentation and use. A gentleman in this city, who is a famous collector of specimens of jade work, has over 250 examples in his collection, some of them dating back to the twelfth century.

EVIDENTLY there are some collectors who take the time to look about and to make their collections in a manner that is scarcely sanctioned by law. At one auction sale in this city a Japanese silver vase, worth \$800 is alleged to have been abstracted from one of the cases while a beautiful example of gold lacquer work, worth \$250, also mysteriously disappeared. The story is told of the theft of a silver incense burner, very fine Japanese work, that was stolen at one of the art sales. In order to reach it the thief had to lean over a high desk, and at this particular place, a woman's garter was picked up, indicating that she had been subjected to considerable strain in securing the coveted treasure. The garter bore a silver clasp with a monogram, but no clue to the thief was given by

it, as the clasp was of English make. Speaking of garters, we hear of a gentleman having bought a pair of these necessary articles for his intended, each one having a solitaire diamond set in it. The price for the pair was \$500.

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THE ENDLESS variety of articles in plated ware is among the notable advances made of late in the production of desirable goods. In the salesrooms of the prominent manufacturers are to be found articles of use and ornament in almost every conceivable form, style and variety, from elegant pocket match safes to elaborate table sets that include every article for table service that the most refined taste could demand. Then there are elaborate articles of bric-à-brac in plated ware, among them being many beautiful statuettes and other works of art worthy of a place in any gallery of choice collections. Scarcely anything is made in metal for decorative purposes or for household use, that is not reproduced in plated ware, and at the same time the manufacturers are exceedingly ingenious and active in devising new goods for themselves. Some of the salesrooms in this city of the plated ware manufacturers are so brilliant with light, and so filled with attractive goods, that one cannot but recall Alice in Wonder Land, and pin his faith to the absolute truthfulness of the Arabian Nights.

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AMERICAN buyers in Europe find little in the jewelry line that is desirable for this market, hence it is that precious stones are imported unset so generally. The foreign settings are lacking in that graceful airiness that characterizes American goods and that are demanded here. Our workmen follow conventional styles less than their European brethren, but stamp their productions with originality and individuality. The work of the old masters should be studied to aid the formation of taste and judgment, but it should not be permitted to dominate the productions of our workmen, who, as a rule, have too much imagination and originality to be limited by traditions or conservatism. Old art is good as an educational study, but its imitation is not desirable, nor, in fact, is it tolerable to any degree in this progressive age. Individuality in artistic gold and silver work is as much desired as in painting, and the only painters in this country or any other who have achieved distinction are those whose style is marked by originality and individuality. In these respects the American workmen in gold and silver and precious stones are far ahead of their foreign brethren.

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AN INTERESTING chapter might be written upon the great variety of signs used by the Jewelers in this city, and we presume New York furnishes as fine a variety of signs as any other city in the country. An attractive sign is a necessity to every dealer, but while in their production there is so much opportunity for the display of art, how very little there is to be found among the jewelers' signs that line certain streets. The main object of a sign is, of course, to announce the name and occupation of the owner, but how few of them do this in combination with good taste. Many signs, even those of prominent houses, wear a dilapidated look, and are made in colors and form that are positively offensive to the eye and a reflection upon the good taste of the owner. Sign painting has kept pace with the progressive spirit of the age, and it is possible to have this kind of work done handsomely. About the least offensive signs to be found in the street and those made in brass, for the reason that, to be effective, the lettering must be in solid black, which is always in good taste, and there is little room for decoration. But where an ambitious dealer has attempted an elaborate display in the way of signs, he has almost invariably produced something that is the reverse of pleasing. We are reminded of this by a conversation that

we overheard in the cars a few days since. One person was telling another, evidently a sign painter, that a certain jeweler wanted a new sign, a certain number of feet long and of specified width, and the sign painter was urged to submit a design. "Make the name big," said his friend; "Never mind the rest so you get the name big and loud, and in striking colors." Not much art required in a job of that kind. By the way, we venture to suggest that many of the brass signs in the lane and elsewhere would be vastly improved by more frequent scouring. Whiting is cheap, and office boys usually have too much idle time on their hands.

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A PROMINENT manufacturer recently showed us some very rich goods, combining diamonds and rubies with fine workmanship in the mounting, which he was about to break up, recover the precious stones, and send the gold to the melting pot. The trouble was that the goods did not happen to catch the public taste, and as he had tried in vain for a year to sell them, he had no alternative but to condemn the style and work them over. Yet these seemed to be very desirable goods, peculiar as to workmanship, but nevertheless attractive. All the labor expended in the production of these goods was lost, and all there was left was the intrinsic value of the stones and the metal. Here is an item of expense in the production of jewelry that is not taken into consideration by purchasers; of course, the manufacturer must make sufficient profit on those goods he sells to compensate for the entire cost of running his factory, and included in this must be the cost of making goods that do not sell. Every one makes failures sometimes, and these must be charged to general expenses, and divided up among the actual sales. Every factory has its experiences in this line, and too often makes costly machinery for the production of goods that do not become popular, or have but a limited sale. Designers are employed constantly devising new things, but it is a difficult matter to divine in advance what will take and what will not. Public taste, like fashion, is a fickle jade, and blessed is he who enjoys its smiles for he is sure to profit by its liberality.

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THE COMING of spring was very much delayed, the cold, disagreeable weather extending well into May, so that farmers were nearly a month behind in getting in their crops in most localities, and all other kinds of business was put back proportionately. April was an extremely dull month in the jewelry trade, sales being slow and collections still slower. As to the condition of the retail trade, accounts differ. Some travelers assert that the dealers are in good shape, and will be large buyers when the season is fairly settled; that trade will be late, but in good volume when it comes. Others declare that the retail trade is generally overstocked, and dealers not anticipating any great demand for goods before late in the fall. Between these two extremes there lies a happy medium, and he will no doubt be wise who finds it and conforms thereto. The probability is that there will be a season of dullness for a few weeks at least, on account of the late spring, but there is no good reason that we have heard for anticipating a prolonged season of dullness. The country is in a prosperous condition generally, and when Congress adjourns and the presidential nominations are made, there seems no reason why business in general should not prosper. Several large dealers have told us recently that their sales thus far this year were in excess of their sales for the corresponding months of last year; we venture to predict that the average for the year for the trade at large will fulfil this outlook. The difficulty with many dealers is that they complain if they do not obtain a full year's business in the first two or three months, not being content to accept each month's proportion. Happy is the man who is content to take things as they come, and not discount the future by loading the

present with predictions of disasters to come. Croaking never yet caught a customer or built up a profitable business. The outlook might be far more unpromising than it is.

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IN OUR May issue we said that there was a rage for silver handles for umbrellas, parasols, canes, etc., and warned purchasers to beware of deceptions in these articles. We learn that frauds are being perpetrated to a considerable extent in these goods, and that cane and umbrella heads marked "sterling" are, in fact, mere shells of silver filled with lead. A gentleman of our acquaintance paid \$9 for a silver head for a cane; it was marked "sterling," and was warranted to be solid silver. His suspicions were aroused after a time, and these suspicions became convictions when he discovered a mysterious rattling in the head of his cane. Investigation revealed the fact that his solid silver head was filled with lead, and that there was about \$1.50 of real silver in it. These goods are offered at every furnishing store by every dealer in hats, frequently by clothiers, cigar dealers, etc. No confidence can be placed in them unless they are purchased from a regular dealer, whose familiarity with the precious metals will serve to protect his customers from deceptive goods. It is safe to say that but a very small percentage of these goods found outside of the stores of regular dealers are to be trusted, and the man who thinks he can buy them cheap is badly victimized. Gold and silver have a fixed price as precious metals, and workmanship is worth something. No man of sound judgment would think of buying anything in the way of precious metals from the street hawkers or Cheap John stores. When genuine goods are desired, the only place to find them is in the stores of the regular dealers in articles made of the precious metals, for these dealers are judges of the material and have their reputations at stake. They cannot afford to deal in the spurious article.

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A NEW YORK correspondent recently furnished to his paper some examples of lavish expenditure on the part of certainly wealthy gentlemen of this city, which goes to show that there is plenty of money lying about for the purchase of articles of luxury or to gratify the most refined artistic tastes. This correspondent says that the costliest string of pearls in this country is owned by a New York lady, and cost \$51,000. Another one has a solitaire diamond ring for which she paid \$48,000. The late Mrs. Morgan is reported to have paid \$250,000 for her diamond necklace, while Mrs. Scott-Lord is reported to own a similar one that cost the same sum. Pictures are mentioned for which prices ranging from \$10,000 to \$66,500 were paid, the last named being the sum which Judge Hilton paid for Messonier's "1807," which he presented to the Metropolitan Art Gallery. Mr. H. G. Marquand paid \$46,000 for a piano, the works being made by Steinway and the case in London, and painted by Alma Tadema. Mr. Marquand is credited with having paid \$26,000 for a billiard table. The Lenox Library has a bible, the first ever printed from movable types, that is valued at \$25,000, while Mr. Brayton Ives paid \$15,000 for an imperfect copy of the same. Mr. Walters, of Baltimore, is credited with having paid \$18,000 for the peach blow vase at the Mrs. Morgan sale, which vase is seven inches high, and the best specimen extant of this particular kind of bric-à-brac. The deduction from this is that manufacturers of artistic goods of whatever description have no reason to be discouraged when such recognition of their work is found among our own citizens. The manufacturers of gold and silverware could tell some interesting stories regarding the liberal orders of their customers for special articles in their line, were they not prohibited from making known the names of their patrons. As great wealth is being accumulated by a greater number of persons, a more liberal demand

springs up for rare or unique articles of an artistic nature. Each owner of great wealth has some particular taste or fancy to gratify, and is willing to pay the full value of whatever he takes a fancy to. Jewelers find a constantly increasing demand for fine goods, and their ingenuity is taxed continuously to devise new things for special customers. Originality and artistic workmanship will nearly always find due recognition.

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EARLY last month the high-cock-a-lorums of the Brotherhood of Locomotive Engineers formally declared the strike against the Burlington and Quincy railroad at an end. As a matter of fact it was at an end before the first week of the strike had passed, as the railroad had no difficulty in filling the places of the strikers, but the Brotherhood saw fit to believe that they could win in the end by harrassing the road. Their efforts were futile, although carrying in their train much trouble, annoyance and cost. The striking engineers succeeded only in depriving themselves of employment, for none of them will be re-employed by the railroad, and involving their fellow workmen in an enormous expense, for thousands of dollars were contributed by workmen in other lines of industry to support the strikers during their voluntary idleness. A statistician who has been studying the subject, writes to a Chicago paper that this strike cost over \$3,000,000, of which at least one-half falls upon the workmen. The switchmen, yardmen, and others who struck in sympathy with the engineers, sustained their full share of the loss, but it is to be hoped that they have learned a lesson that will in part compensate for the loss of money. By the unjust manner in which this strike was prosecuted, the Brotherhood of Engineers has lost the excellent record it had previously earned for conservatism in the cause of labor, and will hereafter be classed with the Knights of Labor for the arbitrary and unintelligent manner in which it seeks to accomplish its ends. The many failures that have attended the strikes of these large combinations and the vast expense attaching to them, should result in convincing the workingmen of the country that it is a costly and dangerous thing to place their interests and their welfare in the hands of a few demagogues, who make a profit out of disturbances, and get more money when they succeed in depriving a body of fellow workmen of their earnings, than they ever do at any other time. The self respecting, competent workman does not need the fostering care of any set of leaders or labor agitators.

Gold and Silver Plating.

EXCITING LIQUIDS FOR BATTERIES.



IN ALL these batteries, the zinc element is immersed in dilute sulphuric acid. The strength employed of this mixture varies from one measure of acid and fifty of water to one of acid and five of water; the usual strength with batteries such as Grove's and Bunsen's (which are soon exhausted) is one to five, but with Daniell's, Smee's, or Wollaston's, one to ten or twenty is only good proportion. It is important that this liquid be free from nitric acid (which it sometimes contains), because that acid wastes the zinc, and in Smee's battery also corrodes the silver. To test for nitric acid, add to the suspected liquid, a small quantity of a solution of indigo in pure sulphuric acid, and boil the mixture; if the cold of the indigo does not disappear, nitric acid is not present.

If the silver plates in a Smee's battery become covered with a dirty whitish film, a trace of nitric acid is probably present. The nitric acid used in Grove's battery, should be free from hydrochloric; otherwise, when it gets warm by the action of the battery, it will cor-

rode and dissolve a little of the platinum plates. To ascertain if hydrochloric acid is present, dilute some of it with distilled water, and add two drops of a solution of nitrate of silver; if a white cloud or milkiness appears, that acid is present. Common oil of vitriol nearly always contains sulphate of lead dissolved in it, and when one measure of the acid is added to five or ten measures of water, the mixture becomes cloudy, and a greyish white powder (consisting of the sulphate) settles to the bottom of the vessel; this powder should not be allowed to get into the battery cells, otherwise it will settle upon the zinc plates, and cause them to waste. In mixing the oil of vitriol and water, it is highly important that the acids should be gradually added to the water, *and not the reverse*, and also that the mixture should be stirred during the addition; and it is especially necessary, that the water and acid be cold, because great heat is evolved by mixing them; if water be added to oil of vitriol, an explosion may be produced by the heat; and more especially is it dangerous to add *hot* water to oil of vitriol. Brown oil of vitriol is that which has been made from iron pyrites obtained from the coal measures, and its color is due to particles of carbon; it is sometimes also impure, but even the purest sulphuric acid is occasionally brown, from particles of organic dust getting into it. Strong sulphuric acid has a specific gravity of 1.845; if its gravity is less than this it contains water. If the acid used in a battery is not sufficiently diluted, crystals of sulphate of zinc are apt to form upon the bottom ends of the zinc plates after a time through want of water to dissolve them, and this impedes the current; a mixture of ten parts by measure of water to one of acid is sufficiently dilute to prevent this; such a mixture has a specific gravity of about 1.10.

The only other liquid used in the batteries heretofore described, is a solution of sulphate of copper; this salt is usually sufficiently pure, if a proper price is paid for it. Any green color in it, is indicative of the presence of sulphate of iron, with which the cheapest varieties are contaminated.

Amalgamation of Zinc.—Zinc rods and plates are always amalgamated, because it makes them more electro-positive, and because it also largely protects them from corrosion when the battery is not in action. The explanation of this is not very clear, but it probably is, that the mercury, by dissolving the surface of the zinc, and traces of foreign metals in it, renders the whole of that surface of uniform composition, and therefore no one part of it is relatively electro-positive or negative to another, and no local current can be generated. It is, however, dependent also upon the presence of a film of hydrogen upon the surface of the metal, for if a trace of nitric acid, or other liquid capable of oxidizing or removing such a film, is present, the mercury does not protect the zinc.

Zinc rods or plates may be well amalgamated, by immersing them in dilute sulphuric acid, until gas is freely evolved, then pouring mercury upon them, and rubbing them until they are bright all over. If the plates are new, they are probably greasy from the process of rolling, and should first be dipped in the caustic-potash solution and swilled, before putting them into the acid, or they should be scraped. After having been amalgamated, they should be placed on their ends to drain off the superfluous mercury, and then the residuary mercury wiped off them. Ruhmkoff amalgamated zinc plates by dipping them into a solution made as follows: Dissolve one part of mercury in five parts of aqua regia (*i. e.*, one part of nitric and three of hydrochloric acids), and then add five parts of hydrochloric acid. Another plan is to put some mercury into a coarse flannel bag, dip the bag occasionally into dilute hydrochloric acid, and rub it upon the zinc plate or rod.

Roseleur uses an amalgamating salt, prepared by boiling an aqueous solution of mercuric nitrate with an excess of powder, composed of equal parts of mercuric chloride and mercuric sulphate, cooling the mixture, and using the liquid only. The liquid is added to the mixture of sulphuric acid and water in those batteries only where two liquids are employed.

The mercury used for amalgamating should be pure; if it con-

tains tin, lead, bismuth, or copper, etc., these metals will adhere to the zinc, and cause great waste, by what is termed "local action," which means that the zinc and the particles of foreign metal, being in contact in an acid liquid, constitute a multitude of little voltaic couples, which generate electric currents (by corrosion of the zinc and waste of the acid), when the principal current is not circulating. For a similar reason, the zinc also should be free from metals less positive than itself. New zincs require frequent amalgamation, because the mercury soaks into them, but as they get old and thin by use, this mercury is left upon their surface, and therefore they rarely need to be amalgamated. When zinc plates become so thin as to fall to pieces on handling, new ones should be substituted, and the old ones may be melted, and cast into rods for Daniell's batteries; or be broken up, put in an iron retort, and the mercury distilled from them at a strong red heat, through a wide and wet tube of leather, into a vessel of water.

Selection of Zinc for Batteries.—The best kind of zinc for batteries and the kinds chiefly in use by electro-platers, are the Belgian and Silesian. The thickness of the plate should vary with the size of the battery; the smallest kind should not be less than one-eighth of an inch thick, on account of its brittleness; when amalgamated, large ones are generally three-sixteenths or one-quarter of an inch in thickness. Zinc bolts for Daniell's batteries are sometimes made by melting together a number of old worn-out pieces of battery plates, and casting in a suitable mold. As all zinc contains traces of less positive metals, when the former dissolves away, the latter comes to the surface, and form an amalgam, and diminish the protective power of the mercury; such a coating should occasionally either be scraped off, or removed by means of a very hard brush, and pure mercury applied. Cast zinc is not so good for electrical purposes as rolled zinc; it is also less easy to amalgamate. Plate zinc may be cut by means of a saw with fine teeth, or by drawing a line across it repeatedly (using great pressure) with the end of a triangular file which has been ground to a sloping point; it may also be bent into cylinders whilst it is hot.

Battery Cells.—These are either of stoneware, glass, gutta percha, or ebonite. For large cells, stoneware is nearly always employed; for small ones, glass is very good, and so is gutta percha, but the preference is generally given to ebonite, especially for Grove's battery, because it is not brittle like glass, and does not become softened like gutta-percha by the heat generated in the battery.

Porous Cells for Batteries.—These vary very greatly in quality; some are so slightly porous, that they very seriously hinder the passages of electricity; most excellent are those manufactured by Messrs. Wedgwood & Co. Formerly, porous cells of wood were employed, but now only those of earthenware are used; they should always be kept in clean water when not in use, to remove nitric acid and salts of the battery liquids from them, to prevent their cracking, and to preserve them always fit for immediate use. The degree of porosity of two cells may be compared by drying them, and then simultaneously filling them with water, and observing the appearance of their outer surfaces after one or two minutes.

Management of Batteries.—If the acid liquid in contact with the zinc is very strong, the zinc plates require frequent watching, to see that there is no local action, and when gas is seen or heard rising from them, or when any dull patches appear upon them, where the acid has acted too strongly, they should be amalgamated; if this is neglected, great holes will be quickly corroded in them. They should be taken out of the cells every evening, if the acid liquor is at all strong, unless deposition is required to continue all night.

After a Wallaston's, Smee's, or Daniell's battery, has been at work a few days, a small amount of sulphuric acid should be added, and the liquor stirred, and this should be done as often as the current becomes feeble, until at length the liquid acquires an oily consistence, and becomes nearly saturated with zinc salt, which crystallizes upon the cells and plates above the surface of the liquid; it is then

time to remove the liquid, and charge the battery afresh; If crystals of sulphate of zinc are required for depositing or other purposes, the exhausted solution may be set aside, and allowed to co-operate. Sometimes in a Smee's or Wallaston's battery, a deposit of zinc forms upon some of the negative plates; when this happens, it is a sign that the acid is exhausted in those cells; either more acid, or a fresh mixture, should then be put in; the deposit may also be removed by immersing the negative plates in a separate portion of dilute sulphuric acid.

(To be Continued.)

Watch Polishing.

BY HENRY BICKLEY.



POLISHING, though looked on as a subordinate part of the watchmaker's art, is one requiring as much tact and skill for its complete mastery as many more important parts of the trade. It may be said of it with truth, that the boy is father to the man, for he who would excel must begin early and practice much. It is from this want of practice, among other causes to be noticed presently, that watch repairers are seldom able to polish, even passably well. Called on, it may be only at rare inter-

vals, to fit a new piece, they find that, although perhaps able to bring it to the required shape and fit, they yet lack the ability to give it the finishing touches in which the good workman prides himself. The man engaged on new work, on the other hand, attains his proficiency by constant and unremitting practice from the first, and by doing similar pieces of work over and over again. It is only by this means that the requisite "knack" and delicacy of touch can be acquired. In fact, the "new" man learns to polish, and the jobber does not. Bearing this in mind, I cannot hope to teach my readers—many of whom doubtless are repairers—to polish by merely talking about it; but I can help them to learn for themselves if they have the will and the patience, by explaining certain broad principles which must always be adhered to if good results are to follow, and by pointing out what I conceive to be some of the more frequent causes of failure.

The first principle to be observed is that the polisher must be softer than the thing polished. This is a principle that admits of no variation. Hard steel, for instance, may be brought to a tolerable surface with soft iron, but with steel of less temper, bell-metal, zinc or tin must be used, as may be necessary, according to the temper of the piece under treatment. It will be found as a rule that large surfaces require softer polishers than small. This may be accounted for by the hard polishers cutting the large surface too fast and so charging the polishing stuff with the worn metal. This fact is most observable in large pieces polished underhand. The indications of a polisher too hard are a dull, scamy, milky-looking surface. If covered with sharp scratches the fault is more likely to be in the polishing stuff than in the polisher.

A polisher too soft will produce a surface apparently covered with minute flaws, known in the trade as "specky." The foregoing remarks are meant to apply to steel pieces, and the same general pieces

hold good in the case of brass, though it may be remarked in passing that to polish brass well is far and away the more difficult operation of the two. The substances used for brass are soft tin, whalebone, horn, and hard wood. All are good, especially the two former.

The point next in importance to the composition of the polisher is its shape; indeed, I am not sure that it is not more important, for the true test of good polishing is the shape of the work. If a surface intended to be flat, or square, to speak in the technical sense, is rounding or hollow, it is a proof of bad workmanship, however, it may shine or glitter. Such work, for the most part, must be the reflex of badly-shaped polishers, and hence the necessity for keeping them in good condition. A straight-edge should be frequently applied to them, and any irregularity of surface or shape carefully corrected. As the polisher is so must the work be; they can only be counter parts of each other, and the workman who can not or does not file his polishers into a proper shape will never succeed in making good work. Polishers, too, especially the smaller ones, should be renewed frequently, for when they become thin and springy they are quite unreliable, and the sooner they are rejected for new ones the better. Soft metal polishers, used chiefly for polishing train wheels, should be re-cut as soon as they cease to be shapeable. If a model be formed of a piece of wood filed to the exact shape, and a plaster mould made from it, the polisher may be cast so smooth as to be almost fit for use.

Having said this much of the polishers, we will now turn to the work to be polished, and of this it may be said that the less it is polished the better. Everything, from the smallest pivot to the largest steel piece, should be brought to the exact shape before being polished. Neglect of this condition is a frequent cause of failure. The shape of a thing should not be altered in the process of polishing. To take pivots, as a case in point; a pivot should have the proper shape given to it by the graver and be so near the right size that mere smoothing is all that is wanted. It is one of the commonest complaints from those not master of it, that they cannot polish a pivot without getting "a lump in the corner" of the shoulder. Now, supposing the complainer to know something of what he is doing, his difficulty must arise from one of the causes under notice. His polisher is in a bad shape, or the pivot was badly turned, perhaps tapering forward, and in that case even an expert would find it no easy matter to bring it straight without bringing the lump at the same time. To polish as little as possible, and to determine the shape in the first instance, are maxims that should ever be present to the mind of the learner, not as regards pivots only, but with regard to everything with which he may have to deal. For reasons just stated, I am not much of an advocate for the use of oilstone dust as a polishing medium. It is useful for brass in positions where the bluestone cannot be conveniently used, such as hollows, etc., and for large steel pieces it may also be employed, but for anything small I consider it to be quite out of place. It cuts so fast, and so soon alters the shape of the polisher, that in the hands of the inexperienced it is certain to do more harm than good. The coarser form of redstuff, known as clinkers, will be found quite sharp enough, and it has the advantage over oilstone dust of giving a much smoother surface, so that it can be followed by the finishing stuff without any intermediate treatment.

I will now pass on to say a few words on polishing stuff in general, and of the proper mode of preparing it for use. When diamantine was first introduced into this country, more than twenty years ago, it came so rapidly into favor that it was thought by many that redstuff would pass out of use altogether. But, though diamantine has held its own, it has not made way as was anticipated. This, I think, is due to several causes. In the first place, diamantine seems so much dearer than redstuff, that many have, no doubt, been kept from buying it on that account. The difference in cost, however, is imaginary; or, if there be a difference, I think diamantine, considering what can be done with it, and the time saved by its use, far the

cheaper substance of the two. I speak of it as being used only for finishing, and not for squaring up work. But there is another cause that may have had a still greater effect on its use, viz.: the great inferiority of the diamantine sold now to that first introduced by Mathey, or, if there is any as good to be got, I have not been fortunate enough to meet with it. Another drawback to diamantine is that it will not polish brass, though I have succeeded with Mathey's, in polishing small pieces, such as jewel settings and balance spring collets. But though it fails generally with brass, its superior powers for polishing steel admits of no question whatever. It cuts quicker, gives a blacker, deeper surface, and will polish steel of a much lower temperature than redstuff. But even the finest diamantine will prove unsatisfactory in its results if it is not properly prepared and used with discretion, as, I fear, it seldom is, except by the few. It should be mixed in small quantities, either on glass or a hard steel stake, with very fluid watch oil, such as Kelley's or Nye's. It must be thoroughly incorporated with the oil, and beaten into a thick paste, care being taken not to take too much oil, for as it is beaten the mixture becomes wetter, and if used at all wet it will not work well. Zinc makes the best polishers for diamantine, or tin may be used if the piece be softer than usual. The paste must be used with extreme care, the polisher being only just dampened with it; if too much it will cut, as before explained.

Much the same remarks, with regard to mixing, apply to redstuff as to diamantine. I find a tendency on the part of every one not accustomed to the use of redstuff to put too much oil to it, and so to make almost fluid what should really be a stiff paste. Of course, under such conditions, success is impossible; so much rubbing is needed to dry it off, that smoothness even, much less color, is out of the question. As in the case of diamantine, the best watch oil only should be used, and the polisher moderately covered. Steel generally does not polish well with redstuff on anything softer than bell-metal, but it may sometimes be used with zinc.

Last, but by no means least, there is a homely principle. I had almost said virtue—connected with polishing that must be strictly observed if success is to follow, and that is cleanliness. As Demosthenes said of action, that it was the soul of oratory, so in a minor sense may it be said of cleanliness, that it is the soul of polishing; without it, success may be sighed for, but it will not be soon. The work, the block, or whatever the work may rest on or be attached to, the polisher, the polishing stuff, and in short everything connected, must be kept scrupulously clean. Plenty of soft bread must be used, and should the piece under treatment have holes or notches in it, they must be kept clear by frequent pegging. When finishing off, the polisher should be moved in short circular strokes and the polisher filed after every rub with an old smooth cut file kept for the purpose.

I have now touched on most, if not all, of the leading points connected with the subject. My remarks have been general, as I had no intention of writing a treatise, but I hope they may be of service to some at least who may read them.

The Fifth Annual Meeting of the Jewelers' Security Alliance.

THE FIFTH annual meeting of the members of the Jewelers' Security Alliance was held at their office, 170 Broadway, on Tuesday, May 1, at 3 P. M.

The meeting was called to order by President Dodd, and business commenced with the reading of the minutes of the last annual meeting. The next business in order was the report of the Treasurer, which was read and accepted, and ordered to be placed on file. The report of the Auditing Committee was presented, and also accepted and ordered to be placed on file.

The report of the Executive Committee was read by the Chairman,

Mr. Bowden, and accepted by the Committee. It was as follows:

REPORT OF THE EXECUTIVE COMMITTEE.

Mr. President and Gentlemen of the Jewelers' Security Alliance:

Your Executive Committee take pleasure in making this, their fifth annual report, and congratulate you upon the sound and prosperous condition of your organization.

In reviewing the business of the year, we find that we have admitted to membership two hundred and twenty-two (222), dropped from our list twenty (20), leaving us at the present time a total membership of seven hundred and forty-one (741).

We have held during the year nine (9) regular and ten (10) special meetings, therein transacting all business necessary to the interest and advancement of the Alliance.

We have to report the robbery of one of our members. The safe of Mr. G. W. Fairchild, of Bridgeport, Conn., was robbed on July 17. After a long and tedious, as well as expensive chase, we succeeded in capturing the three thieves and recovering a portion of the goods, the balance having been melted and proceeds squandered. The burglars are each serving a term in the Connecticut State Prison at the present time.

We feel that the members of the jewelry trade are to be congratulated that three of the most expert burglars in the country are in safe keeping, as they have made the jewelers their special prey for a number of years.

We again call the attention of our members to the necessity of prompt notification (in case of robbery) to the proper parties; *it is of vital importance*. Had we known of the above case *immediately*, much trouble as well as expense would have been spared, all the goods recovered in twenty-four hours and the thieves in custody.

We have with sorrow to note the death of our esteemed and valued counsel, Algernon S. Sullivan.

Our thanks are due to the trade journals for the many complimentary notices, and the interest they have manifested in the Alliance.

We believe, gentlemen, that the benefit to be derived from a membership in the Alliance has been fully established, and the permanent success of the organization assured.

Respectfully submitted,

N. H. WHITE,
CHAS. G. LEWIS,
C. G. ALFORD,
C. C. CHAMPENOIS, *Secretary*,
J. B. BOWDEN, *Chairman*.

An amendment to the Constitution was offered by Mr. Hayes (the same having been presented to the Executive Committee 30 days previous, in accordance with the provision of the Constitution governing amendments), namely: The membership of any member may be cancelled and annulled at any time by the Executive Committee upon the affirmative vote of five (5) members to that effect. The question being open for discussion, Mr. Bowden spoke at length on the advisability of such provision, and quoted several instances where such discretion on the part of the Executive Committee might conduce to the advantage of the membership at large.

The ayes and nays being called for resulted in the unanimous adoption of this amendment, to be known as Art. V., Sec. IV., and to read as above.

An amendment to the By-Laws was offered, as follows: In Art. XI. insert the word "unless" in place of "accept," also after the word "displayed" add "near the safe or safes," and at the end of present Art. XI. add these words: "And no certificate shall cover a safe or safes located on different floors, or in different rooms or offices."

President Dodd strongly advocated the above amendment, and cited a case in point where the necessity of certificate being displayed near the safe was clearly shown to be essential, and hoped that the members generally would recognize the importance of this matter,

and place the certificates in full view near the safes. The motion being put this amendment was carried, Art. XI. to now read as follows: "No member shall be entitled to the benefits of this Alliance unless his certificate of membership is conspicuously displayed near the safe or safes at his place of business therein described, and no certificate shall cover a safe or safes located on different floors, or in different rooms or offices."

On motion Mr. Edward Smith was called to the chair, and the election of officers being next in order the chair called for nominations for President. Mr. David C. Dodd, Jr., was nominated, and on motion the nomination was closed and the Secretary instructed to cast one ballot for Mr. Dodd for President of the Alliance for the ensuing year, which was done. Mr. Dodd thereupon declared unanimously elected. Nominations for Vice-Presidents being in order, Messrs. A. K. Sloan, Henry Hayes and David Untermeyer were nominated for 1st, 2d and 3d Vice-Presidents respectively, and on motion unanimously re-elected to such offices. For Treasurer, Mr. W. C. Kimball was nominated, and on motion was unanimously elected Treasurer for the ensuing year. Mr. C. C. Champenois was nominated for Secretary, but declined the honor with thanks. Mr. Geo. H. Hodenpyl was then nominated for Secretary, and unanimously elected to fill said office. Their being three vacancies in the Executive Committee nominations were called for, and Messrs. J. B. Bowden, F. Kroeber and Silas Stuart nominated for the three positions, and on motion unanimously elected as members of the Executive Committee for a term of two years each. On motion Messrs. N. H. White and C. G. Lewis were appointed a committee to escort Mr. Dodd to the chair, on resuming which Mr. Dodd spoke as follows:

ADDRESS OF PRESIDENT DODD.

Gentlemen—I can only say for this renewed expression of your kindness and confidence in re-electing me as President of this Association for another year, I sincerely thank you.

I do not know that there is anything special to be said with reference to the work of the last year, or with reference to what may be in anticipation in the work of the coming year, but I suppose that a word of congratulation is appropriate and consistent, in view of the results of the work of this past year.

We have made great advancement and an impression upon the trade which, perhaps, is far greater than that of any previous year in the history of the Alliance.

Men hesitate in connecting themselves with new organizations. The large majority of mankind hesitate as to giving their names to a new enterprise or an experiment. When this organization was formed, I suppose that there was not a single gentleman who united with it who did not feel he was venturing something in giving his name to an experiment, but at the same time there was a deep impression on the minds of a great many that something must be done to protect the interests of the retail dealers of the country. Precisely as in the year 1874, after the robbery of the trunks of our salesmen, there was a feeling on the part of the manufacturers that something must be done to secure our goods in course of transportation through the country, and an organization was effected and its work was thorough and complete; but this was a far different work and one that required much greater exertions and brought us into contact with a very different class of men from those who had robbed the trunks of our travelers.

When in consultation with Mr. Pinkerton at that time in regard to this work, he said to us: "Gentlemen, you have got a new field; you have got to deal with burglars, not with sneak thieves." But the work was undertaken, and year by year through the first few years of our history we struggled on, gaining something in confidence and in material strength.

At the annual meeting last year, we felt that we had reached the point where we were secure, where we had the confidence of the trade and where we had the means to fulfil our promises without

assessing our members in case of robbery, and I, for one, feel additional hope and courage so far as the future is concerned.

The jewelry trade is beginning to realize that they cannot afford at the very small amount which this security costs to be without it, and I think that a large part of this work has been accomplished through the agency of our jobbers and our larger manufacturers in bringing constantly to the attention of their customers the necessity of this protection.

We have shown to the burglar the strong arm that exists in this association, and the very fact that we are strong enough to pursue and arrest and punish him is enough to deter him from touching a safe protected by our certificate. We prevent the robbery of the safes of our members by the demonstration that we have given, that we can arrest and convict the burglar.

We furnish explicit instructions to our members in reference to the course they shall pursue, and in every case where we have had to deal with men who have robbed safes, the line of policy which was marked out by the detectives that we employed has proved to be the theory on which the burglars proceeded. Now, I have another word to say. The position of President of this association, by the wise arrangement of our By-Laws, is not in any sense an onerous one; but there is work in connection with this organization that chiefly devolves upon the Chairman of the Executive Committee and also upon the Executive Committee, and I can say to-day, and I know that every member of the Executive Committee will bear me out in the statement that I propose to make, that the Chairman of our Executive Committee has with faithfulness, earnestness and good judgment discharged his duties during the past year, and the Alliance is very much indebted to him for the efficiency he has displayed in the position he holds. We have a membership of over 700, and if the Alliance progresses as rapidly during the coming months as it has during the last few, the time will come when our membership will number at least 5,000.

As far as our financial matters are concerned, we feel we are fortified against the possibility, as provided for in our By-Laws, of assessing our members in case of unusual outlay.

Now, gentlemen, thanking you again for the honor that you have bestowed upon me, and desiring that all may be here to see this association achieve even greater success than in the past, I leave the work in your hands.

The President appointed Messrs. Edward Smith and A. Joralemon as Examining Finance Committee for the ensuing year. On motion a vote of thanks was extended to the different trade journals for the interest they have displayed in the Alliance, and the report of the meetings they have published during the year.

On motion adjourned.



[From our Special Correspondent.]

PARIS, May 10, 1888.

There is a great stir among Parisian jewelers to the effect of bringing all nations to recognize the same karat, which would, no doubt, greatly facilitate transactions in diamonds. Taking as a basis the milligram, the various karats compared together are as follows: India, 207 $\frac{3}{10}$ millig; Germany, 205 $\frac{1}{10}$; Holland, 205 $\frac{3}{10}$; Portugal, 203 $\frac{8}{10}$; Madras, 205 $\frac{3}{10}$; England, 205 $\frac{3}{10}$; Spain, 199 $\frac{9}{10}$; Borneo Island, 197; Florence and Leghorn, 196 $\frac{1}{2}$; Poland, 188 $\frac{1}{2}$. About seventeen years ago, on the 19th of July, 1871, the Jewelers' Chamber Syndicate decided that the weight of the karat should be recognized by all French diamond dealers to be 205 mill. The "Diamants

de la Couronne" were sold last year according to that rate. The sworn experts before the Courts base on it their estimates. At the beginning of last March, Mr. Achard, President of the Diamond Dealers' Chambre Syndicate, entrusted, with the agreement of the Jewelers' Chambre, Mr. David with the mission of sounding the foremost English firms on the important question of a universal karat. Mr. David returned from London fully convinced that it would meet there with no opposition whatever, on condition that the African Mining Companies should be willing to give their consent to it. Messrs. Jules Porgès & Co. readily accepted to take the necessary steps to win over the Cape of Good Hope.

Soon afterwards, Mr. Achard wrote to Mr. Boucheron a short letter in which the opinion of the Diamond Dealers' Chambre upon that interesting matter is dictated as follows (we feel rather inclined to propose the Dutch karat as being the oldest. We should like to agree about it with the Jewelers' Chambre Syndicate): Now, if the milligram is to be accepted as a basis, why not choose the French karat, which is exactly 205, in preference to the Dutch one of $205\frac{3}{16}$? Why not at once get rid of an unnecessary fraction? This is what practical people will not fail to observe, and these, we are sure, would like to obtain the opinion of American jewelers and diamond dealers, which, on account of their extensive business, are first to be consulted on that matter.

The Clock and Watchmakers' Chambre Syndicate, the president of which is Mr. A. H. Rodanet, opened, in April, the yearly competition to French workmen and apprentices in that trade. All those who aspired to be rewarded were told to send their work before the 31st of May. The prizes will be delivered in June. A diploma of honor and a large size gold medal will be awarded to the cleverest, let his work be a clock, or a watch, of any description, as long as it is made with due reference to the latest improvements. Particular notice will be taken of new designs, of elaborate workmanship, of a thorough regard to finish; and all the pieces, with the exception of some very special ones, must be made entirely by the exhibitor. Other medals in vermeil, silver and bronze will be awarded for the best among various works of less importance. A competition of knowledge has been equally open to workmen and apprentices on all sciences connected with clock and watchmaking; viz., arithmetic, algebra, geometry, mechanics, physics and horology. The deserving ones will receive prizes consisting in learned books on those matters. Gold, silver and bronze medals will also be awarded for the best treatises or ablest translations of essays on horology. The authors of the most remarkable drawings will be rewarded with valuable instruments.

It has been erroneously believed by most people that all the jewels known as the "Diamants de la Couronne" were sold last year. Some were given to the Mineralogic Museum and the School of Mines. Some have been preserved, on account of their historical character. These are the following: The Military sword, which is a marvellous piece of workmanship, the hilt being entirely made of assembled diamonds, the very best of the whole collection. It is unique as a specimen of jewelry. The Broche reliquaire, a very rare piece, in which are set triangular diamonds, of a peculiar cut ascribing to it the date of 1476; the whole style of it being undoubtedly that of Louis XI's reign. The Regent, the Mazarin described in the inventory of 1879 as being of the color of a peach blossom. It is said by the connoisseurs to be the most beautiful diamond in the world. The Dey of Algiers' watch, a magnificent present offered to Louis XIV. This is a very original piece. The big ruby Chimère, a very pure stone engraved in the most wonderful manner. A Dragon: enamel and pearls, and the "Elephant du Danemark." Some other pieces are doomed to be melted as too inferior. These are: The Dauphin sword—another one that belonged to Louis XVIII., and the Imperial crown, a very clumsy looking headgear, much in the shape of a fireman's helmet.

The preserved jewels will be placed, very shortly, under a glass case specially made, and with a special work, which, at a

second's notice, will enable the guardian of that treasury to send it sliding down into an iron-coated pit. This glass case, exhibited in the Galerie d'Apollon, at the Louvre, will, besides those precious relics, contain the other well-known remnants of bygone times, prominent among which are St. Louis' ring and Charlemagne's scepter. This one is still considered as authentic in spite of the irreverent little story told by our eminent jeweler, Germain Bapst.

This stout demolisher of sham idols and trumpery relics has just been dealing a severe blow to a most peculiar branch of business, and, seemingly, a very flourishing one; I mean the sale of old flags. Mr. Bapst wrote about it a very long letter to Mr. Messonnier, who is busily organizing the military part of our forthcoming universal exhibition. We gather from that epistle the following information. The counterfeit flags are smaller than the authenticated ones, but they are soiled, worn out and pierced through, as though they had actually undergone all the chances of the fiercest battles. On the other hand, the imitation of the ornaments is a thorough failure. The crowns, fleurs de lys, etc., were painted in gold on the real old flags, whereas their insignia, made of cut out faille, are stuck on the false ones. Besides, it is evident that these run down flags were copied out of rather ancient water colors, the hues of which altered in the course of time. For instance, what should have been of a dead leaf tinge, is on the forged banners of a decided yellow. The old flags of the Garde Nationale have been, too, very badly imitated. The crown on one of them is that of Charles X., instead of having been made after models of Louis XVI.'s time. It appears that these flags are generally sold by lots of four or five pieces.

The individual, who took upon himself to remove, during the peaceful hours of the night, the stock of valuable medals belonging to the rue de Louvois' antiquarians, has proved to be a learned young Greek whose most musical name is Raftopoulos. He was traced out through offering to settle his bill at the Bouillon Duval, Avenue de l'Opera, a rather rare coin stamped with the image of Napoleon, Emperor of the French and King of Italy. That most daring collector is strongly suspected of having tried, some time ago, his precocious hand, in a masterly manner, at the expense of Athens' Museum.

A French company has just been established to work the mines of topazes of Villabuenas, Spain, and it is thought that, as a consequence of it, in course of time, all the topazes to be found will fall into the hands of that company. If such were to be the case, the topazes' market should be transferred from Tdar, Germany, to Paris.

Flowers, butterflies and birds made of assembled gems are still in fashion and always will be according to my humble opinion. Appropriate copies of what is most beautiful in nature can never cease being admired, as long as people of taste exist. A flower is used as a brooch or thrown with seeming carelessness on the hair. A bird or an insect is placed on the corsage or on the head; the former, with displayed wings, seems ready to fly off, and the latter appears to climb up, in a slanting way, either from the waist or the shoulder, or some fold of the hair. We have just seen, at a jeweler's, a remarkable pansy made of different gems, the arrangement of which is managed so as to obtain, as nearly as possible, the gradation of color special to that flower. In another place, we noticed a cluster of two acorns, each one being a cat's eye emerging out of a pretty cup made of tiny diamonds, the stalk sparkling with stones of the same kind. Nearly all the bracelets worn at present are a succession of jewels and twisted gold. Most rings and ear-rings are made of a good size diamond circled with pearls or small brilliants.

In Adrienne Lecouvreur, which has been successfully revived at the Theatre Français, Mlle. Bartet wears, in the third act, a white satin dress embroidered with roses and jewels, these consisting of diamonds forming Easter daisies linked together. In the fourth act, Mlle. Pierson is so dazzlingly adorned that it is almost painful for the eyes to look at her. She wears a dress of white brocade orna-

mented with gold lamellæ and silver lace-work, the bodice of which is fringed with lozenge-shaped spangles. A radiant necklace with a lumpy locket crowns like a glory that over-sparkling robe.

The style known by the name of Louis XV. is more than ever fashionable for all articles in silver, from imperceptible salt spoons to majestic chandeliers. Through engraving, chasing, or stamping, the most capricious patterns of that period are reproduced on all the pieces of a table set, and all the useful or useless nicknacks, filling up a dressing-case, or scattered in a boudoir.

Business seems to have a slight tendency to improve, in spite of the farcial rioting about General Boulanger, frequently damped by beneficent showers. Several important weddings have taken place lately. Something very peculiar occurred at one of them, that of the Count René Firino with Mlle de Vauherre. The bride's parents, who live in the south of France, came to Paris previous to the wedding, and stayed at the Baron de Wandel's, one of their sons-in-law, 10, rue de Clichy, where the signing of the contract took place. According to the custom, there was an exhibition of all the presents offered to the bride. After all the guests had retired, it was found that a diamond necklace and a set of jewels had disappeared. The loss seems to be about forty thousand francs. JASEUR.



* A Complete History of Watch and Clock Making in America.

[By CHAS. S. CROSSMAN.]

Number Twenty-four.

Continued from page 68, May, 1888.

THE FREDONIA AND PEORIA WATCH COMPANIES.

The history of this company is another which shows something of a reversal of the usual order pursued in starting a watch factory. In this instance the men who organized this company had already built up a large trade and were using a large quantity of American watch movements, so they concluded to manufacture for themselves; it seemed to be a stroke of economy. Before going on to speak of the organization of the company, we will glance for a moment at the business enterprises of Messrs. E. D. and C. M. Howard, of Fredonia, N. Y., the originators of this company. They were engaged in the manufacture of patent medicines and the selling of American watches and jewelry. They also imported Swiss movements on which they engraved the name of "Howard Bros." These movements they cased and sold throughout the United States on the C. O. D. plan by means of extensive advertising. After a time they dropped the Swiss movements for those of American manufacture, and adopted the name of the "Independent Watch Co.," under which title they carried on the business as a firm until the spring of 1880. At this time they were using a great number of 18 size movements, principally those of the Illinois and Hampden Watch Companies' manufacture. Finding that their business was constantly increasing, they concluded to manufacture their own movements instead of buying them. With these ideas in view, the Fredonia Watch Company was organized in April, 1880, with a capital of \$150,000; of this amount, \$76,000 was subscribed by the Howard Bros., part of which was paid in machinery and tools which they had previously purchased and had on hand. Mr. E. D. Howard was elected President, Mr. E. S. Gates, Vice-President, and Mr. O. R. Burchard,

Secretary and Treasurer, the latter being afterwards succeeded by Mr. W. H. Smith. Mr. C. M. Howard took the business management of the company. The Board of Directors was composed of Messrs. Hubbard, Gates, E. D. Howard, D. R. Barker, O. R. Burchard, W. H. Smith and C. M. Howard. The building which the company took for their factory was the same one that had been occupied by Howard Bros. in the manufacture of patent medicines, the firm now erecting a new building across the street for this branch of their business, which had always been kept entirely separate. Mr. C. S. Mosely was secured for Superintendent of the factory until October, 1881, when he was succeeded by Mr. Jas. Dangerfield, who came from Lancaster, Penn., but had been in charge of the plate, screw and steel departments at Fredonia for some time previous to his taking the superintendency. Mr. John Baxter was put in charge of the escapement department, Mr. Thomas Perkins of the finishing, Mr. Geo. D. Parsons of the jewelery and motion, and Mr. E. M. Bowen was foreman of the machine shop. Later, Mr. Perkins was put in charge of the plate and train room, and Mr. John E. Bayliss of the finishing department. The company began by finishing up United States movements, of which they had material in various quantities. Not liking the hole in the top plate they made a regular full top plate.

For a few months after they started they turned out these watches at the rate of twenty per day. They bought their dials and used imported balances and hair springs. It had been the intention of the company to make watches to be sold direct to consumers as well as to the regular trade, but the former plan was abandoned in 1882, as it was found that the two methods of disposing of their products would not work well together. They then confined their attention exclusively to the legitimate trade, and at the same time concluded to drop the old United States model entirely, as dealers did not care to handle it. So Mr. Dangerfield, the new Superintendent, made a new 18 size model of the same general construction, but adding some improvements; the first were turned out in July, 1883. They were all key winders, but in the fall of the same year they produced the same style of watch in stem winders.

This, however, did not suffice to make the company a success, as the changing of the model had entailed a larger expense upon them and the trade did not take hold of the new watch very extensively, from the fact that previously they had sold the greater part of their watches through express agents as just referred to, and a strong prejudice existed against them in trying to build up their business. It became evident that unless some radical move was made their race was nearly run. The Howard Bros. who, of course, virtually owned the business desired to retire from it and confine their energies to the eye salve trade, but they could not leave the watch company without most disastrous financial results. Their financial standing, however, gave credit to the company and kept the works going until the summer of 1885, when it was decided to remove the works, change the name of the company, and last, but not least, secure additional capital. At this time Mr. J. C. Adams, who for some time had been traveling for the Fredonia Company, was deputed to visit Peoria and present a proposition to establish the works in that city. This was accepted by the Peoria people, they to furnish capital to the extent of \$100,000, making the capital altogether \$250,000, and donated five acres of land; \$60,000 was all that was actually paid in on the capital stock, but in the matter of land they exceeded their promise and donated six and one-half acres, valued at \$13,500. The center building and one wing was erected and occupied, and the factory started in June, 1886, with Mr. C. M. Howard as Manager, and Mr. G. P. Benezet as Superintendent. The actual production of watches for 1886 and early part of 1887 was extremely limited, and the number of employees was less than 100. But early in 1887 the company secured through Mr. Adams a contract for furnishing the employees of a large western railroad system with watches, and this gave a new impetus to their business. In September following Mr. Benezet was succeeded by Mr. F. F. Ide as Super-

intendent, who had previously been in charge of the springing department at the Illinois Company's factory at Springfield. Mr. Ide is quite well-known in the trade by reason of his several ingenious tools for watch repairing which he has invented and manufactured. The work has gone forward well under his superintendence, and the average daily production is now 30, as reported at the annual meeting in January this year. The company are now making six grades, all full jeweled, and it may be said are rather catering to railroad trade. Some changes have taken place in the management since their removal to Peoria, and we understand some others are anticipated.

While the company cannot be said to have made rapid growth, it has made steady progress, and we predict that it will be able to hold its own, and finally score what may be counted a success.

(To be Continued.)



[From our Special Correspondent.]

MAY 20th, 1888.

The month of May was undeniably quiet, if not dull. That was the verdict of the entire jobbing trade. Manufacturers and their agents, on the other hand, did not experience any appreciable diminution in the volume of their business. The retail trade was not buying very briskly, hence things were inevitably somewhat quiet among jobbers. In looking around for the causes of this turn in trade, not the least to be taken into account is the very unseasonable weather that characterized the first weeks of May. The chill breezes and drenching rains and uniformly low temperature, re-acted unfavorably on the dry goods and other staple lines of business, and so indirectly affected the jewelry business, which is unusually sensitive to depression in other lines. When the dry goods merchant cannot sell his stock of spring goods owing to the wintry condition of the weather, and when he sees that summer will probably be along without any spring to divide it from the winter, he does not feel particularly like wasting money on luxurious ornamentation for himself, or buying his wife a pair of diamond ear rings or any of the latest novelties. He feels that it is a time for caution and retrenchment, and is determined to look before he leaps. This is not an overdrawn picture of the general feeling in Chicago during at least the first half of May, and it is to be hoped for Chicago's credit that she will be on her better behavior, as regards her weather, during the time of the Republican National Convention, else the delegates will upbraid the National Committee for not sending them to St. Louis instead of the Garden City. Collections have been somewhat slow during the month, but no apprehension is felt on this account, as the season was so uniformly prosperous right up to the end of April. The retail trade is just holding cautiously a little back, but will soon be forced to buy to keep pace with the demand which the summer must inevitably bring.

The Elgin National Watch Company feels well satisfied with the condition of business, and finds it difficult to keep up with the ever increasing demand for its popular movements. Its prosperity at the present time may be described as phenomenal. The company has just published a large and handsome new catalogue of prices of all its watch materials. The volume, which has been compiled under the supervision of Carlos Smith, the chief clerk, is profusely illustrated, printed on fine paper, and forms one of the most elaborate catalogues ever issued by a manufacturing company. The catalogue

is being mailed to all regular jewelers and repairers in the United States and Canada, whose addresses can be ascertained.

Robbins & Appleton, agents of the American Waltham Watch Co., are doing an unprecedented business at the present time. Hardly ever in their business history have they had such a "boom." The volume of business for April was more than \$50,000 ahead of the showing for the previous year. This is said to be to some extent from the demand for the new watch which they have placed on the market. Mr. R. A. Kettle, the genial and popular manager, is feeling particularly happy, and is to be congratulated on the bright era of prosperity which his business has struck.

The New Haven Clock Company reports excellent local business for the month of May. Its showing is considerably ahead of last year, and satisfactory business is confidently expected during the coming months.

Mr. Grove Sackett, the manager of the Gilbert Clock Company, says that things are very busy with him at the present time, and looks forward to still better things.

The Meriden Britannia Company is doing its full share of the business that is going. Manager A. L. Sercomb is entirely satisfied with the condition of trade and the business outlook. The company's attractive store and show windows are among the sights of the city, and few visitors miss the opportunity of inspecting what is almost without question the most palatial store of the city.

The Gorham Manufacturing Company had an excellent run of business during April and May, coming out far ahead of the previous year's figures. Manager Prentiss is feeling very much encouraged, and hopes that the "boom" will continue. Mr. Gorham, of the Chicago office, is still out on the road, and his reports indicate that he is doing very well.

The Middletown Plate Company is doing a fine business in its new quarters, at the corner of Wabash avenue and Congress street. The new salesroom is one of the most extensive and well-appointed of its kind in Chicago, and there is not a more heavily stocked business place in the city. Col. G. A. Harmount, the popular manager, takes a great deal of pride in his new headquarters, which are directly opposite the Grand Auditorium building, now in course of erection, where the Republican National Convention will be held this month.

The Towle Manufacturing Company, in its commodious quarters in Otto Young's building, continues to grow in popularity, and is doing a thoroughly satisfactory business in its own particular lines of goods. Manager J. A. Todd gives an encouraging report of the condition of business.

Lapp & Flershem moved into their handsome and commodious premises at the northwest corner of State and Washington streets at the beginning of May, and are to be congratulated on having secured such excellent business headquarters in the very heart of the business center of the city and the jewelry trade.

Mr. L. S. Grout, of the Excelsior Sign Company is always busy. Things never flag with him. His business activity keeps him on his feet all day, and he is perhaps the most ubiquitous man in the trade. His signs and tools are always working their way more deeply into popular favor.

Giles, Bro. & Co. report business fully up to their expectations. The weather has affected their retail store to some slight extent, but, with the Republican National Convention so near at hand, C. K. Giles feels quite chipper, and looks forward to reaping a rich harvest of shekels. Mr. Giles' handsome store will be one of the wonders of the city to the tens of thousands who will throng Chicago during the early part of June.

The Executive Committee, Committee of Counsel, and Board of Trustees of the United States Jewelers' Guild met in annual session at the Saratoga Hotel on May 9th, 10th and 11th. President W. N. Boynton, of Manchester, Ia., occupied the chair, and among others present were J. S. Kelley, of Abilene, Kas.; Oliver

Startsman, of Iowa City, Ia.; C. J. Olin, of Piqua, O.; S. S. Sisson, of Covington, O.; R. S. Mershon, of Zanesville, O.; and H. E. Fox, the secretary of the Guild, were represented by proxies. Representatives of the manufacturing companies which supply the Guild goods were also in attendance, as well as Mr. J. H. Purdy, the general distributor of the Guild goods. The committee renewed its contracts with the Rockford Silver Plate Company, the Aurora Watch Company, and J. H. Purdy & Co. Mr. J. S. Kelley, of Abilene, Kas., was re-elected a trustee. The membership fee was changed from \$2.50 a year to \$2.50 for five years, payable in advance. This was said to be due to the large increase in membership during the last two years. Measures were discussed for the more extensive distribution of Guild goods, and it is understood that the executive committee is now clothed with power to arrange, if it see fit, for the formation of a stock company to undertake the distribution of the Guild goods. By invitation of the committee, Mr. Fred. Purdy read an interesting paper explaining the cause and effect of magnetism on watch tools and watches, and the demagnetization of the same. Mr. Purdy used appropriate apparatus for the demonstration of his points. The paper was ordered published, and the secretary instructed to furnish copies to members of the Guild on application. The regular triennial meeting of delegates will take place in Chicago, in May, 1889, when a President, Secretary, Treasurer, Executive Committee, Committee of Counsel, and one member of the Board of Trustees will be elected. The Aurora Watch Company extended an invitation to the delegates to the meeting in 1889 to visit their factory.

Under an order from Judge Gresham, of the United States District Court, Mr. Foreman, the receiver for N. Matson & Co., is offering for sale the stock, fixtures and leasehold of the firm. Bids, according to the terms of the order, were to be received until May 17th, and all bids were to be opened by Judge Gresham on May 18. The talk around the trade is that the committee appointed by the creditors will probably take hold of the business, and work it for the behoof of the creditors at large. It is to be hoped that a house with such an old and honorable record will still remain as one of the landmarks of the Garden City.

The Western Watch Case Manufacturing Co., which has had its office at 67 Washington street, has removed to its own factory at No. 1411 Wabash avenue.

Mr. Geo. W. Crawford, who recently launched the local trade paper, known as the *Chicago Jeweler*, has been made defendant in a suit in chancery brought by Safford's Jewelers' Mercantile Agency. Mr. Crawford, before embarking on his literary career, was in the employ of the agency, and it is charged that he is now using the agency's mailing list. The object of the suit is to enjoin him from using his present mailing list. Racy developments are anticipated.

Mr. W. E. Burrows, who for some little time has done a small jobbing business at 67 Washington street, failed on May 7th. The liabilities are understood to amount to several thousand dollars, and are said to be almost entirely to eastern houses. Mr. Burrows succeeded Mr. Bryant, formerly of Bryant & Sproeble.

Mr. Conrad Schuntz has just fitted up an elegant new retail store at 361 South Halsted street.

Mr. Adolph Kaempfer, a retail jeweler, doing business at No. 150 West Madison street, has got himself into trouble through his overzealousness to keep away an amazing crowd that had been persistently blocking his windows from the gaze of legitimate customers. Mr. Kaempfer was determined that the nuisance should cease, and resolved to try the water cure. On Saturday, May 12th, while one of the supposed obstructions was standing in front of the window Mr. Kaempfer deliberately filled a pail of water and deluged the unfortunate on-looker, who proved to be a reputable attorney named J. H. Kraft. The jeweler could not possibly have made a worse break, for he was at once arrested and fined \$100 for the gratuitous shower bath which he gave the limb of the law. The matter, moreover, does not even rest there, for Mr. Kraft has, in addition, sued

Mr. Kaempfer for \$5,000 damages, alleging that his health has been injured and his clothes ruined by the unexpected waterspout.

Pond & Meeker, jewelers, of Sycamore, Ill., failed on May 5th, with liabilities of \$5,000. Mr. J. H. Purdy, and other Chicago jobbers are among the losers.

Mr. J. P. Redaelli, well known for years as a thriving jeweler at Yankton, Dak., has located at Denver, Col.

Mr. H. G. Clark, of Yankton, Dak., passed through the city early in the month on his way to Cleveland, where he will spend some time visiting his friends.

Mr. H. F. Higbee, formerly of Ashland, Wis., is at Hot Springs where he is being treated for a stubborn attack of rheumatism.

Among the well-known representatives of the manufacturing and retail trade who have visited the city during the month were: M. Huffmann, Quincy, Ill., President of the Aurora Watch Company; J. H. Weber, Manager of the Aurora Watch Company; J. S. Kelley, Abilene, Kas.; George B. Kelly, Secretary of the Rockford Silver Plate Co.; C. J. Olin, Piqua, O.; D. E. Sedgwick, Bonapart, Ia.; A. F. Hall, Janesville, Wis.; E. L. Hall, Green Bay, Wis.; F. B. Johnson, Marinette, Wis.; Mr. Miller, Aurora, Ill.; E. P. Oliver, Ottumwa, Ia.; G. M. Rigdon, Streator, Ill.; C. H. Coles, Reed City, Mich.; W. N. Boynton, Manchester, Ia.; Oliver Startsman, Iowa City, Ia.; S. S. Sisson, Covington, O.

W. A. B.

Prize Essay on the Balance Spring.

[By MORITZ IMMISCH.]

Continued from page 44, April, 1888.



IN MAKING a helical spring, the wire is wound upon a hollow cylinder, either quite smooth or furnished with grooves corresponding with the form intended to be given to the spring. The cylinder must never be thicker than about one-eighth of its diameter, because if too thick it will, on being immersed, cool too slowly, to the detriment of the hardness of the spring. When a smooth cylinder is used, the winding up of the spring is performed in the turns. After one end is fixed to the cylinder by the

screw with a flat head, the wire is kept tight by a weight attached to the other end and wound up till the cylinder is quite full.

Care must be taken that the run of the coils should appear to be even and continuous. So wound up and fixed by screws at either end, it is hardened in a thick iron box with a loose cover; the free space within the box, which ought to be about three times the diameter of the cylinder and somewhat deeper, is then filled with powdered charcoal mixed with some powdered ivory, and the whole is heated to a yellow heat, in which it must be kept about a minute in order that the heat should get well diffused and imparted to the cylinder through the charcoal, which is a bad conductor of heat. Then it should be taken out of the fire and be reversed over a vessel containing oil, the loose top and the cylinder falling into it, and the spring thus becomes hardened. Proceeding thus, the spring will be evenly hard throughout and never change its form, which sometimes happens when water is used instead of oil. Some makers wrap platinum foil round the spring to exclude the air, and then the heating can be performed on a piece of charcoal by means of a blowpipe. For hardening, cold water must be used in this case. Makers using this mode assert that in consequence of the spring being in contact with metal on each side, while being heated and cooled, the granular

disturbance within the spring will be less, and a spring so made will soon cease to accelerate its rate, an imperfection to which all springs except very soft ones are more or less subjected. There is a degree of plausibility attached to this argument in favor of this method. Every maker has his own ideas, but the very fact that amongst a number of springs made by any maker the performance of a few only exceed the average degree of excellence, proves that assertions of this kind must be received with more or less caution. It is my opinion that the proportion between the degree of hardness and the length of the spring is the principal consideration.

Some makers have the habit of hardening and tempering the spring and then trying whether it will suit the balance, and if the number of turns is between eight and twelve they use it.

Nothing can be more injudicious than that. He should first make up his mind about the number of turns he wants to employ (I should in no case recommend less than ten), and then temper the spring accordingly. If it does not suit the balance a different wire must be employed, or another spring made with another temper, less coils, of course, requiring greater hardness.

The great difficulty is that the change of color is scarcely a sufficient guide for the degree of hardness in long springs, for in these low degrees a spring may be made considerably softer without being accompanied with a corresponding change in the color.

A better plan is based upon the fact that a hard piece of steel will color with a smaller amount of heat than a soft. If two pieces of steel, a hard and a soft, be put together on a bluing pan, the hard piece will be of a rich blue before the soft becomes purple, and when a hardened piece, which has already been blued twice, after having been whitened after each bluing, is brought to a rich blue color the third time, it will require a degree of heat which would have made it (had it not been whitened twice) of a very pale blue color. As the time when the rich blue color appears can be easily observed, the number of times the operation is repeated will be indicative of the degree of hardness. If a spring having ten coils is blued six times, including the final bluing, it will have a suitable degree of hardness.

It is not necessary that the spring itself should be whitened each time, as the whitening of the screws fastening the wire to the cylinder will serve the same purpose. The spring, before being finally blued and set to shape on a cylinder furnished with suitable grooves, must be whitened with oilstone dust and wood, which is done partly in the turns and partly on a flat piece of wood fixed in a vise, and which is thin enough to go between the coils to allow the sides or edges to be finished off. The necessary manipulations are so simple as scarcely to need more minute describing. In regard to fixing, also, any one having looked at another with any attention can hardly make a mistake.

The curves must be bent with a pair of tweezers made expressly for that purpose, and to be had at any tool shop.

Flat springs are wound up three at a time between a pair of platinum plates, having three steady pins, and being screwed or pinned down to friction tightness and so hardened.

The best flat springs are, before final bluing, set to shape on a disc having suitable grooves on its plane.

In conclusion, I shall say a few words on the subject of timing watches in positions.

Above all, it is necessary that the frictional conditions in the pivots should be equalized as much as possible, inasmuch as if too great a difference has to be counterbalanced by isochronal adjustments, any change in the extent of the arcs arising out of other than frictional differences (as change in the motive forces while the watch remains in the same position, and imparted motion) will cause the long vibrations to be slower. In order to equalize these frictions, it must be increased when in the horizontal and diminished when in the vertical position as much as possible. In the former case, the flattening of the pivots or shaping the ends so as to form a slightly inclined plane (which latter manipulation causes the rubbing surfaces to act farther from the center) will be necessary. In the latter case, thinness of

the holes or a convex shape of the sides of the holes and utmost finish of the pivots will be required. The pivots should be conical in shape in order to be made thin without lessening their durability.

As far as regards the vertical positions, the greatest narrowness of the holes consistent with freedom of motion will be of importance. Very frequently differences arise in consequence of the incorrect form of the pivots. If they are not perfectly round, and are, for instance, of an oval shape, the going of the watch will be influenced in the same manner as if the balance was out of poise.

When the watch is in a quiescent state, its effects will be the same as if the balance was too heavy. The existence of such an imperfection can be ascertained by changing the position of the roller or rollers on the balance staff. If the relative points of greatest differences change with the roller they arise from the escapement; if they retain their position with respect to a given point of the balance they arise from pivot imperfections, and it is best to change the staff at once. The balance should in all cases be perfectly poised. Any change in this respect is bad.

No other than general rules can be given, as practice and experience are necessary to enable the artist to account for and to correct differences of a more complex nature, because the smaller the error becomes the more difficult it will be to reduce it, and is much more trying to the reflective powers of the artist than errors of a coarser kind. There is still a wide field to be cultivated by all watchmakers who love their art, and although there are no more government grants to be won by raising the standard of excellence of timekeepers the object possesses so much intrinsic interest in itself as always to challenge an honorable ambition of the best in the profession, their exertions being stimulated in addition by the requirements of the present age of railways and telegraphs, where correct time becomes a question of greater importance every day.

[THE END.]

Lathes and Lathe Work.

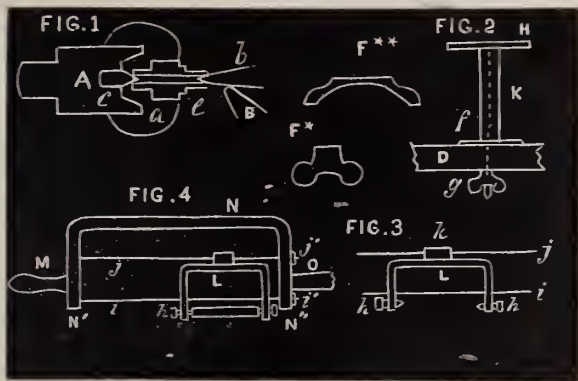
BY THE MODEL WATCHMAKER.



BEFORE COMMENCING to tell how to build a cheap and efficient "wig wag" for polishing staffs and pinions, I will give another method of turning in a center pinion from the one described in the April number of this journal. The pinion, as it comes from the material man, should be drilled and prepared as recommended in the article referred to above. The principal departure in the method I am now about to describe from the one before given, is in the wax chuck used because after the pinion is once in the wax, all the details of turning are precisely the same. The chuck is shown at *A*, fig. 1, but instead of using a small, short arbor on which the pinion is placed, we turn a recess in the end of the brass chuck, and screw in a small steel center as shown at *C*: this center is tempered as hard as the graver will cut, then turn it to a long, tapering cone point. This cone point is used to center one end of the pinion; there is a trick in using it, and every time it is used the wax must be removed so as to leave the cone *C* bare. Put the chuck *A* in the lathe and place the pinion as shown, then place the back center as shown at *b* and let the lathe revolve slowly, heat up the chuck with your alcohol lamp and apply cement until the pinion is enveloped, as shown at the outline around *a*. Let the wax cool and remove the back center, then warm up the wax again a little to soften it, and with a piece of pointed pegwood, steadied by the tool rest as shown at *B*, bring the center at *C* to perfect truth. Now, proceed to turn as described in April number. When the ends are reversed the cone at *C* must again be bored so as to ensure a

perfect centering. By using such a cone as shown at *C*, any size of hole in a pinion can be centered, and by centering with the back center the pinion is made to rest securely on the cone *C*, and although the end at *C* may be a little out, the re-heating and centering with the pegwood will set the pinion in the cement perfectly, if the pegwood is made to press the pinion *d* firmly on *C* at the same time it trues up *C*. The wig wag mentioned above is a very convenient and rapid device for polishing staffs, and will do the work as well as one costing a good deal more money. The one shown does away with the necessity of an extra countershaft, another economy. The first thing to make is a support for the arbor which works the reciprocating polisher. About the prettiest as well as cheapest support for such an arbor is a piece of brass tubing, $\frac{3}{4}$ or 1 inch in diameter and 4 inches long. This rests on a base placed directly on the bench. A disc of thick sheet brass, about 2 inches in diameter, will answer for such a base. The best and nicest base, however, is one cast of brass, and shaped as shown in vertical section at diagram *F***; such a base nicely turned and polished is an ornament to any bench. It is well for any workman to find out some brass founder where he can get casting done, and send the pattern by mail and get the castings back by the same source. A casting such as shown at diagram *F*** would not cost more than a quarter, including postage. At diagram *F** is shown a thumb nut for securing the support shown in fig. 2 to the bench; this is also best cast in brass, but if one does not care about going to the trouble and expense a square nut will answer. In the device, as shown in fig. 2, a bolt extends from the cap *H* down through the brass tube *K* and bench *D* to the thumb nut *g*. The

2 inches long; these are secured in a frame by two centers, one in each end, allowing the slip to adapt itself to a staff or arbor turned slightly taper. It is desirable to make the parts as light as possible, consistent with strength. There is a slide and arbor having a compound motion which goes on the top of *H*, which will take too long to describe in this article, so we leave this part to next issue and describe the slide which holds the bell metal slips. The best material for this is $\frac{1}{8}$ inch square steel, bent as shown in fig. 3, where *L* represents the square steel. Tapped into each end are two screws *h h*, which have conical points for holding the bell metal slip for polishing. Attached to *L* is a small slide of brass which is to hold the frame *L* from turning. The screws *h h* should be made of steel and the cone points hardened. The frame *L* and slide *K* are drilled to allow the wires *i j* to be passed through. These wires are strained in a frame, as about the cheapest arrangement on which the frame *L* could be moved back and forth. We next make another frame very similar to *L*, except it is made of heavier material, $\frac{1}{4}$ inch square steel being used; this frame is shown at *N*, fig. 4, and should measure $4\frac{1}{4}$ inches on the wire *z'* between the ends *N'* and *N''*, to allow the slide *L* to vibrate $1\frac{1}{2}$ inches. The wires *z' j* are strained tight by little nuts at *z' j'*. The broken end at *O* is part of the connection extending back to the arbor to be mounted on *H*. The handle shown at *M* is for guiding and holding the attachment when in use. One of the screws *h* can be substituted by a spring cone point so the slips can be readily taken out and changed. The screws, however, are the safest, and if the hands are milled so as to turn with the thumb and finger, are quite rapid enough.



cap *H* is made of a heavy piece of sheet brass, about $\frac{1}{4}$ of an inch thick by 1 inch wide and 3 inches long. This cap supports the arbor which carries the crank for working the wig wag. It will be well to describe this attachment in general terms and then give the details. This device resembles in many respects such as are supplied by the different makers of American lathes. I presume most of my readers have seen these attachments, but for the benefit of those who have not, I would say that in effect they are precisely on the principle of a pivot file or burnish worked back and forth by hand, except they are moved more rapidly and regularly, and can be used with grinding and polishing material to produce a high finish. It might be briefly described as an automatic file and polishing slip holder which did not tire or get nervous, but always held the polisher flat and at right angles to the work. The grinding and polishing slips are held in an arm which can be put up out of the way, and then brought down so as to work exactly at right angles to the staff or pinion we wish to polish. In order to always have the slip which does the polishing act as stated, that is, at right angles to the face of a pinion; the device or attachment which works the polishing slip has to be made so it can be moved along in the cap *H*, but it is very seldom, in fact, never occurs in ordinary watch work that we need to move the polishing slip more than an inch back and forth in the direction of axis of the lathe. There is another peculiarity about this attachment which is, it does not commence to work back and forth until the slip is well nigh down on the staff to be polished, and ceases to work as soon as it is set up out of the way. The polishing and grinding with this attachment is done with bell metal slips about

The Saturday Half-Holiday.



ONSIDERABLE disappointment has been manifested over Governor Hill's veto of the bill repealing the law enacted last year, making every Saturday afternoon during the year a legal half-holiday. The law was put through the legislature originally by some sentimental enthusiasts who apparently thought that the less workmen were required to work the better it would be for them. The fact that about ninety-five per cent. of the population are compelled to work to support themselves and their families, and that every prudent and ambitious man is desirous of making the best use possible of his time, was apparently overlooked by the advocates of the half-holiday law. As a matter of fact the workmen never asked for the passage of such a law, and, when it was passed, they found themselves embarrassed by it. It was never observed to any extent and the workmen were the earnest opponents to its enforcement. Possibly if the law had been so framed as to compel the employers to pay a full day's wages for half a day's work, the workmen might have been in favor of it, but when it became apparent that the law could not compel this, the men were only too anxious to work the full six days each week. Custom makes laws as well as legislatures do, and custom had decreed before the legislature interfered, that during the three hot months of Summer, most business houses would close for half a day on Saturday, thus giving relief and recreation to both employers and employees at a time when it was most needed. To undertake by law to compel a continuance of this practice throughout the year, when such relaxation was not necessary, was to propose an injustice to employers and employees alike. As a matter of fact, the law was a dead letter from the first so far as workmen were concerned, and was not observed after the Summer holidays last year any more than if no such law had been enacted. Shops were open on Saturdays as on other days, and the workmen were given the desired opportunity of working full time and receiving full pay therefor.

All that was accomplished by the half-holiday law was to enforce some new restrictions respecting the presentation, acceptance and protest of commercial paper, thus embarrassing the banks, which had

to comply with the law, and business houses in this respect. The banks, however, accommodated themselves to the requirement of their patrons as far as possible, and ignored the law so far as receiving deposits and paying checks was concerned. The absurdity of keeping upon the statute books a law that was practically a dead letter, and, so far as it was observed, was an embarrassment and a nuisance, caused the legislature this year to pass a bill repealing the half-holiday law. Governor Hill, however, saw fit to veto it, so that the law of last year is still operative. The Governor fails to give any good reason why it should be preserved, but as he is essentially a politician, and confessedly hoping for further political honors, the secret of his action can probably be traced to this fact. Whatever may have been his motive for vetoing the repeal bill, he certainly has not thereby conferred such a boon upon the workingmen as to induce them to rush in crowds to the polls to cast their votes in his interest—his bid for their votes will have to be based on something more substantial than his veto of this bill. Until another session of the legislature, the banks will be forced to continue their recent practice regarding commercial paper, and the business community will suffer the same annoyances that they have been compelled to put up during the past year.

As to the Saturday half-holiday, business houses will pursue voluntarily the practice inaugurated by them several years ago, and close their establishments on Saturday afternoons wherever that is feasible. There are many retail houses that could not close on Saturday afternoons without inflicting great inconvenience and suffering upon a large portion of the community, notably the workingmen. Many of these take the half-holiday for making needed purchases, and find this about the only time in which they can do their shopping; to close the retail stores would inflict a hardship on them. But pretty much all the manufacturing and wholesale establishments can close for half a day during the hot weather not only without incommoding any customers, but with positive advantage to themselves and their employees. They have been so closed in years past, and they will be this year during the months of June, July and August. This will give thousands of employees an opportunity to make a short run into the country for fresh air and relaxation, and to give their families an outing that they could not afford but for the holiday. This is in the interests of health, for the city becomes, during the hot Summer months, almost pestiferous from the excessive heat and close bad atmosphere resulting from it, so that a run to the seaside or the mountains is a great relief and reinvigorator. Customers have learned to anticipate this action on the part of manufacturers and wholesale dealers, so that there does not follow any loss of trade in consequence of it. The practice has grown out of the necessities of the case, and it is much more satisfactory than it would have been had the legislature attempted to enforce a similar course by statutory requirements. On the first of September, however, the half-holiday law will again become a dead letter, and all places of business will again resume their usual practice by keeping open all day Saturday, and workmen will be expected to put in full time if they count upon receiving full pay.

Obituary.

SETH THOMAS.

Seth Thomas, the senior member of the Seth Thomas Clock Co., died on April 29, at the residence of his daughter in Thomaston, Conn.

Mr. Thomas was born in Thomaston on December 31, 1816, and was the eldest son of the elder Seth Thomas, the founder of the Seth Thomas Clock Co. He was educated at the Farmington Academy and at the age of twenty-one was married. He engaged in business as a general merchant, and for many years held the postmastership of his native town. In 1859 the elder Seth Thomas died, and his eldest

son succeeded him in the presidency of the Thomas Mfg. Co.'s Brass Works. This company sold out its business in 1868 to the present Plume & Atwood Company, and Mr. Thomas then became Secretary of the Seth Thomas Clock Co., which position he held up to the time of his death. The position was not an onerous one, however, and of late years he had not been very active in business.

Mr. Thomas was a popular man, with a wide acquaintance in the locality where he lived. As a merchant when a young man, he was successful, and was several times rewarded by his fellow-citizens with public offices. He was twice sent to the State legislature, and at other times was a Justice of the Peace and a selectman of his town. In public improvements he also took some active part, as he likewise did in social and church affairs.

His death was caused by a complication of diseases from which he had suffered for some time, but it was sudden, nevertheless. His wife died seven years ago, and he leaves two daughters and one son, Mr. Seth E. Thomas, the Treasurer of the Seth Thomas Clock Company. After his death the body was removed across the street to the old Thomas homestead, whence the funeral was held on the Monday following.

GEORGE W. SIMONS, JR.

Death has again invaded the firm of Simons, Brother & Co. Mr. George W. Simons, Jr., died at his residence, 48th and Chester avenue, of typhoid fever, on Thursday, May 3d, in the 36th year of his age. On March 15th last, his father, George W. Simons, Sr., died. Mr. Simons, Jr., had charge of the manufacturing department of the house of which he was a member, and had been connected with the firm since 1878. Mr. Simons was very popular among his friends and acquaintances, and in business circles was known as an upright and honorable gentleman. The employees of the firm feel his loss keenly, and at a meeting held on the day following his death adopted the following tribute of respect to his memory:

IN MEMORIAM.

We, the employees of Simons, Brother & Co., assembled this 4th day of May, A. D. 1888, do place upon this record our feelings of profound sorrow for the loss by death of our late employer, George W. Simons, Jr.

To know him was to respect and love him. Our daily intercourse during business hours has giving us ample opportunities for proving his sterling qualities, and we have ever found him gentle, conscientious and true. His fidelity to the interest and sympathy with the humblest of those in his employ command our grateful recognition, and we shall ever cherish the memory of his association with us as employer and friend. Deeply impressed as we are by his death, we would wish also to extend by this our warmest sympathies to those upon whom this affliction must fall most heavily, and we feelingly and respectfully tender to them our sincere condolence, believing that the God in whom he trusted will be to them a strong consolation in this their time of trouble.

Resolved, That these sentiments be published, and a copy of them be engrossed and presented to his family.

JAMES YOUNG, President.

JAMES W. CAMPBELL, Sec'y.

Committee:

GEORGE T. LINN,
H. A. WEIHMAN,
A. S. S. FUSSELL,
W. N. BISBING,
L. F. EARL,
OTTO REICHENBACH.

Philadelphia, May 4, A. D. 1888.

GEORGE DUBOSQ.

George Dubosq, an old and well-known manufacturing jeweler, of Philadelphia, died on Sunday, May 13th, at his residence, 834

Earp street, in the 76th year of his age. He was the survivor of seven brothers, all of whom followed the same business and lived to be over 70 years of age.

Mr. Dubosq began the jewelry business in 1851 on Second street above Arch, with Mr. Samuel Owens, with the firm name of Owens & Dubosq. They afterwards removed to Third and Chestnut streets. At the breaking out of the war Mr. Dubosq abandoned the business and enlisted in the 40th Pennsylvania volunteers. At the close of the war he took a position as melter in the United States mint, and afterwards went into the navy yard as storekeeper. He leaves a wife and one son, the latter being at present engaged in the jewelry trade.



[From our Special Correspondent.]

PHILADELPHIA, May 25th, 1888.

The jewelry trade of this city was given a genuine surprise on the first of the present month by the announcement that the firm of McCarty & Hurlburt, one of the oldest, if not the oldest, jobbing jewelry houses in the city had virtually ceased to exist, and was succeeded by a new concern into which had been transferred the young blood of commercial and manufacturing enterprise. Mr. Henry O. Hurlburt, who for years has conducted the business of the firm of McCarty & Hurlburt, gave out no trumpeted advance notice of his intention, but preferred to act rather than talk. Without saying anything of his plans he wound up the affairs of the old house and established the new before anybody was aware that any such move was contemplated. The change in the style of the firm can best be explained by the new name, which is Hurlburt & Sons. Mr. Hurlburt admitted his two boys into partnership with him. They are fully prepared by training, experience and ability for the business duties in which they have entered, and under the new order of things the house starts out with every promise of a continuance in an improved form of the old-time success. Mr. William H. Hurlburt and Mr. Frederick B. Hurlburt are the names of the two young men who have associated with their father, a veteran among the jewelry manufacturers and jobbers of the Quaker city.

This establishment was originally started in 1829 by James Peters, who, years ago, was a leading jeweler in Philadelphia. After conducting a large and constantly growing business for a long time, he admitted to partnership with him his two nephews, Franklin Butler and Mr. Edwin McCarty, who came from the land of wooden nutmegs and carpenter-made barns, and who were yankees to the backbone, so far as regards clever methods of doing business. After a long career of prosperity Mr. Peters retired and his interest was purchased by his partners and relatives, who changed the style of the firm from James Peters & Co. to Butler & McCarty. This was the name of the firm when Henry O. Hurlburt joined it in 1862 as a traveling salesman. Ten years later he obtained an interest in it, and it was then known as Butler, McCarty & Co. In 1876 Mr. Butler retired, and then the name was again changed this time to McCarty & Hurlburt. Mr. McCarty died in 1879, and in February, 1880, the surviving partner succeeded in making an arrangement with the executors of his estate, by which he purchased Mr. McCarty's interest and conducted the business on his own account. By the admission of his sons into the firm, Mr. Hurlburt preserves its connection with the past, but at the same time obliterates all traces of the original founder, Mr. Peters, whose relations succeeded him, but are in turn succeeded through the inevitable march of time and events.

But this is not the only change in the affairs of the firm. Simulta-

neously with the alteration in, or perhaps it is more proper to say addition to, the *personnel* of the house, its quarters were moved from 131 North Second Street, to 938 Market street. That this change of base is advantageous is beyond all question. It brings the establishment nearer the business center, and places in its way more facilities for improving and enlarging its trade. The new store is several times larger than the old. It is 120 feet in depth and the factory on the fourth floor contains all the conveniences that can be desired. The change in the name and location of the firm was the cause of the starting of a rumor to the effect that Mr. Hurlburt was financially embarrassed. As a matter of fact nothing could be further from the truth. Indeed it is quite evident judging from all the surrounding circumstances that the affairs of the house of Hurlburt have taken a decidedly upward tendency.

The smart young salesman who played the swindling game on the Keystone Watch Club Company, and embezzled about \$1,200 from that concern last month has come to grief. The City Surety Company, which had gone on the young man's bond for \$500 when he was employed to sell timepieces on instalments, put a detective on his tract and he was run down in Baltimore. In that city he was arrested, and requisition brought him here. He is now lodged in the county jail awaiting trial, with the prospect before him of a year or so of enforced residence behind prison bars. His name is Herbert D. Wells.

The affairs of the firm of Hirst, Moore & White, which agreed to dissolve partnership on March 17, may be said to be practically wound up. The partnership was entered into two years ago with the limitation fixed at five years. It was found necessary to disband however, and the step was taken with the full consent of all parties concerned. Joseph H. Watson, W. Storer Howard, Robert D. Maxwell, the liquidating trustees, have met all the liabilities of the late firm, dollar for dollar, with the exception of a couple of notes which are not yet due, and they still have claims in their favor outstanding. Mr. L. P. White who was connected with the late firm has opened an agency for the Dueber Watch Case Company in the same building, 631 Chestnut Street, and Mr. Charles S. Hirst, one of the other ex-partners, has started in the diamond business in the same place, and Mr. John R. Moore has embarked in the dental business in Wilmington, Del. Dr. J. W. White, who was a member of this firm, is President of the Department of Charities and Correction of the municipal government. Mr. J. Albert Caldwell of the retail jewelry firm of J. E. Caldwell & Co., left this city last Friday for New York. On Saturday the 12th instant he sailed from the latter city for Europe on board the steamer *Etruria*. He goes abroad on a business journey for the house, which will occupy several months and take in a very large territory on the continent. This is Mr. Caldwell's fifty-seventh voyage across the broad Atlantic.

Mr. Maddock, of the firm of Simons, Bro. & Co., has just returned from an extensive business trip in the south and west. He says the country in those sections is growing and prosperous, and relates with great unction, as an illustration of the advance toward wealth of the working classes, that he saw the great labor demonstration in New Orleans in which "the men along the wharves—the stevedores—turned out with frock coats, broadcloth trousers and silk hats. I believe every one of them had a watch in his pocket." The last sentence he dwells upon as only a sanguine jeweler can.

George W. Scherr, of the firm of L. A. Scherr & Co., says business is looking up. "For awhile it was dull but things are on the mend now," he declares with a hopeful smile. Mr. Scherr is a good democrat and prominent in politics. He could go to the St. Louis Convention to help nominate Mr. Cleveland if he wished, but he prefers to stay at home and attend to business.

Atkinson Bros. report that there is no abatement in the boom in their Keystone Watches. They say their factory in Lancaster is scarcely able to meet the requirements. The National Watch Case Company, Booz & Humbert's new venture in Arch Street, also talks of big business and even better prospects for the future. The Com-

pany has been compelled to add to its force of workmen during the past month. All the jobbers here express themselves as not at all afraid of the effect of the Presidential agitation on business. W. H. Sheaffer & Co. say they have no fears on this score, as their trade both local and abroad is gradually yielding to the prosperous influences which prevail in all sections covered by them. One of the Hollinshed Bros. is constantly on the road, and this firm is pushing its trade with assured success. Mr. Peter L. Krider is "in the swim" with the rest, and there is nothing new to report with H. Muhr's Sons, since the retirement of one of them last month. Some of the individual jewelers who like to mingle politics and business, are predicting evil results of the tariff agitation; said one of them, a democrat, to the CIRCULAR representative to day, "let Congress pass the Mill's bill if it wants to, but the talk unsettles the country. The bill itself will do no harm." Another, who is on the republican side of the house, declared, "if the Mill's bill passes the whole business interests of the nation will be upset, and the jewelry trade, which is one that furnishes luxuries, not necessities, will be among the first to feel its baneful effect." So there it is from both points of view. There are few low tariff men in Philadelphia, however. Its a protection city, jewelers and all.

While on the subject of politics it might be well to introduce a harmonizing influence. Mr. Henry Gautschi, of Gautschi & Sons, says his firm is ready to produce it in either the democratic or republican convention at a moment's notice. This house has lately been extending its music box trade in the west, and is consequently prepared to enter the great gathering of the national party in Chicago and St. Louis, and attune their deliberations to any popular airs that may be desired.

The optical trade is becoming overcrowded. Many of the leading jobbers and dealers say that the curbstone eyeglass peddlers are renting stores and cutting rates to a serious extent. Still, Mr. Williams of the Optical Company and Frederick Mayer do not complain of business, which they say is equal to the volume it had attained at this time last year. There is little or nothing to report in the trade circles. M. Zineman & Bro. had a large exhibit in the Drug-gists' Convention held in Lincoln, Nebraska last week, and their traveling agent in the west reports that it boomed their business. Mr. C. D. Bishop is still running the National Optical Company's Works of which Mr. H. N. Fitzgerald has supreme control, although the concern is chartered as a corporation. The stock, however, may be put on the market at an early day, and then again it may not.

PENN.

Fashions in Jewelry

A Lady's Rambles Among the Jewelers.

THE show windows of our leading up-town houses during the past month have been, as according to THE CIRCULAR these ought to be, leading objects of interest to the endless throng of humanity that daily tread the streets. There is certainly no more successful mode of securing the attention of passers by than that of advertising one's own wares in one's own windows. Nine women out of every ten will stop to admire an attractive show window, and eight out of the nine who paused to admire will enter the shop, and—if the salesman they chance to meet knows his business—become patrons.

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A WELL dressed show case or window is not without its attraction to men; indeed, it is a help as well as an attraction. Generally speaking, men dislike what the average woman delights in, and what

in common parlance is termed "shopping." They want the question as to "what shall be bought?" settled before entering the store, then all they have to do is to see several varieties of *one* object, make their selection and pay for it. The shop windows with their varieties of attractive goods act like an index to a big book. The would-be patron sees something therein which is just what is wanted; or, if not, that suggests the correct thing, and *presto!* all is made plain. The article is purchased and there has really been no "bother" about it at all.

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THE only wonder is that a greater number of jewelers do not appreciate the immense value of this free advertising of their goods. One great obstacle to a harmoniously dressed show window is unquestionably an ignorance as to how to make it attractive. All that is required is taste and a due sense of the "fitness" of things. Now, by reason of his trade, every jeweler ought to be a man of taste; he ought to know just how to place articles, precious and otherwise, so that they will not quarrel with one another, but act as foils, each enhancing the beauties and good points of its neighbor.

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BOTH jewelry and silverware require, for best effects, a suitable background or groundwork from which to be viewed. This fact is generally recognized by our New York dealers. A walk through Union Square and up Broadway and Fifth avenue will exemplify this statement. A study of the show windows of such houses as Tiffany's, Jacques & Marcus', Whiting's, the Gorham's and Starr's is an education in way of harmonious draperies and artistic colorings in the linings and coverings of windows and cases, as well as in the grouping of decorative articles therein. If neither the jeweler nor any of his salesmen chances to have an artistic eye as regards harmony of color, it would be a wise plan to call a wife, a sister or some feminine friend to his assistance. A few yards of plush, velvet or silk of pleasing color, introduced as a lining, a ground work, and if the style of window admits, a fulled curtain at the back will enhance the goods there ten per cent.

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DURING the season of Easter, much attention may be gained by a show window lined and draped with white. Of course, this is too dainty to withstand much exposure, but one of the most attractive show windows in this city regularly spreads its white velvet bed and curtains at both Easter and Christmas times, for the reception of novelties during the seasons mentioned. White, it ought to be added, makes at all seasons an admirable back for enameled jewelry.

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A WELL-KNOWN Fifth avenue firm, noted for fine window displays, much affects Nile green satin-finished silk, as a background from which to exhibit silver articles. Two colors and two materials are sometimes blended with admirable effect in the draperies and linings of show windows, such, for instance, as dark olive green velvet and pale blue silk; green velvet or plush, with drab or ashes of roses silk, or maroon and a delicate shade of blue. Gray produces harmonious contrasts, both with colors that are bright and brilliant and those that are sombre. Yellow should either be used in small quantities or distributed among other colors; light, bright yellows are seldom in place. Red, in the hands of a novice, is a difficult color to manage, and is only pleasing when deep and full, whether inclining to yellow and called scarlet, or towards blue, as crimson. If the scarlet passes a certain degree of impurity it falls into a hot, brown red; if the crimson be much reduced, it tends to a cold color known as magenta, either of which, in masses, is disagreeable and to be

avoided. Every jeweler knows that purple velvet is an effective foil for both silver and gold; maroon is another good color, so are several of the many shades of blue.

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WHEN silk-plush or velvet is out of the question owing to its cost, very good effects may be gained by substituting soft finished all-wool fabrics of choice color; or, cheaper still, the extra-heavy colored Canton flannels made especially for portieres and curtains. Another desirable material is the one known among upholsterers as "satin sheeting;" there are a number of soft finished silks, ranging from 75 cents to one dollar per yard, such as surahs and China silks, that afford very graceful draperies.

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AN UPHOLSTERY device, which consists in radiating concave layers of the covering material in center and at ends of back, thus pleasingly breaking up the surface and displaying the texture in manifold shades, is suggested where soft finished fabrics are employed, or where the material has a silvery sheen or is shot with changeable shades of one color.

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A SHOW window, in the center of which appears a raised dais on which to stand a leading object, is one easily furnished. Minor articles are readily grouped around such a central piece and with pleasing effect. Such a window is also admirably adapted to the exhibition of a solitary article, when said article is of sufficient size and artistic value to afford the space. A presentation piece, or a prize cup or unique vase attracts special attention when exhibited in this way, and city jewelers and silversmiths avail themselves frequently of this mode of exhibition.

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NOT only ought the articles in a show window to be frequently changed, but the articles there exposed should be seasonable and new. If it chances to be a time when weddings are frequent, it stands to reason that fine displays of gem jewelry, silver toilet articles, table ware and choice bric-à-brac should follow in quick succession, forming a series of tableaux equally helpful to purchasers and dealers. During the springtime of the year, flower jewelry, silver articles suited to tourists and other summer necessities, suggest themselves. As winter approaches, candelabra and lamps ought to have a turn at the show windows, in alternation with silver handled umbrellas and sticks, and the novelties in jewelry and silverware introduced for the season. It goes without the saying that patrons expect to see appropriate displays as Christmas and Easter-tide approach. Wide awake jewelers in small places change the contents of their show cases to suit the local news announced in their home papers. The announcement of a birth in a leading family with big connections, suggests all sorts of things required in babyhood; the announcement of the death of an important personage, marks a fitting time for a brief show of mourning goods.

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A NOTICE of New York's shop windows, without mention of the new parasols, would be omitting a leading feature of this spring's exhibitions. These parasols are most beautiful and varied. Many of them have been made to order to match particular costumes, and represent, therefore, in their covers, all the colors of the rainbow, but as the distinctive feature that marks them for the jeweler's own lies in their handles, I will write only of the handles, which are sometimes of gold, but oftener of silver. These handles are, many of

them, elaborate and costly, yet by virtue of the fact that a handle which this season figures on a parasol may next year decorate an umbrella stick, makes them in the long run comparatively economical. Oxidized silver is much used, and the tendency is to massive rather than light effects in the handles made by our own manufacturers. Some imported specimens seen represent birds with long beaks. Other parasols have irregular light-colored sticks with silver insects crawling up, or with silver lizards and small monkeys climbing the sticks. Occasionally a show window is devoted entirely to parasols, open and closed, and grouped so as to present a harmonious combination as regards coloring. In other windows the parasols form a colored canopy over smaller objects.

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A LITTLE later on handsome fans will be seen in place of these parasols, and this leads to a repetition of what has before been told in these columns, namely, that fans are a natural adjunct to a jeweler's stock.

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VERITABLE treasures of art are to be seen in our leading stores. Gilt is combined with silver on exterior surfaces; etching prevails, perhaps, over relief work, though there are beautiful examples of the latter in the open work handles of baskets and the borders of epergnes. Fluted and twisted forms are favorites for the stems of jugs and pitchers. Some silver jugs seen were decorated at the neck with the cord of silver tied in a bow in front. In the designs of some of the new silver dishes has been introduced delicate fine beading.

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SILVER baskets are having prominence. A fancy at the present moment prevails for these baskets in connection with silver weddings, while gilded baskets figure at the golden wedding anniversaries. These baskets take on a variety of forms and are used for a variety of purposes. A favorite form is the one known as the "Marie Antoinette," which is not unlike a fish basket. Another variety is called the "Boulangier basket," and resembles a military hat, inverted.

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AMONG the most attractive goods displayed for the table is the silver-mounted China. This includes a choice variety of Doulton salad bowls, Worcester, Minton and other choice porcelain jars and fanciful dishes, such as cracker jars and jam pots, fruit bowls and the like in silver mounts beautifully decorated.

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DECIDED novelties in table ware are claret jugs of crystal in form of a bird, with silver feet and beak. The association of glass and silver, by the by, is of frequent occurrence now in such articles as claret jugs, salad and punch bowls, olive jars, etc.

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A NOVELTY in way of candelabra is one that has the lights shaded by translucent shells, on which landscape scenes are painted in rich translucent colors.

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A UNIQUE pen rest and ink bottle combined, consists of a section

of ivory tusk for the pen holder, with the bronze head of an elephant protruding above it for the ink stand.

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THERE has been quite a long list of weddings since Easter, and as our modern belles indulge in great expectations in regard to wedding presents, somebody must have reaped a golden harvest. Numbered with things expected for wedding presents by fashionable brides are a diamond necklace, diamond aigrette or other hair ornament, diamond ear rings, pin and bracelet, fine solitaire ring, silver dinner set, tea set and other articles for the table *ad libitum*, silver-mounted hair brushes and toilet articles, silver trimmed furnishes for a traveling bag, etc., etc. Numbered with presents received by Miss Isabella Singer, daughter of the sewing machine manufacturer, on her marriage to the Duc de Cazes, at Paris, were a diamond tiara and a pearl necklace from the bridegroom, and a diamond necklace from the mother-in-law.

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A FAVORITE gift to the bridesmaids from the bridegroom appears to be either a brooch or bangle. A gold brooch, with a monogram in pearls or small diamonds, is popular for the purpose. At one wedding each of the six bridesmaids wore a diamond "88" brooch; at another wedding the brooches were in form of diamond swallows.

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A BRACELET that has gained some popularity and employed as a gift from the bridegroom to the bridesmaids, is a small loose curb bracelet to which is attached a medal bearing the date of the wedding.

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PRIMROSE Day, which was kept with due honor in London, was the occasion not only of an immense quantity of perishable primroses in the florists' shops, but gold and silver primrose brooches and bracelets in the jewelers' show cases. At the several "primrose weddings" that marked the day, the bridegroom's present to the attending bridesmaids was either a primrose brooch, bracelet or pendant to wear along with a primrose-colored costume. These precious posies *en suite* are designed as souvenirs of the all-important occasion on which they were originally worn, and afford an effective ornament for summer dresses.

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IT NEED hardly be told that primrose jewelry blooms in our own show cases and is patronized by our own fair ladies. Some quite new brooches seen recently were admirable specimens of colored enameling, the peculiar tints of this flower being perfectly reproduced. A new gold primrose bracelet has also appeared; this consists of a circlet of round gold wire, finished on top with an enamel primrose, the gold stem of which is twined around one side of the bracelet. A pearl rests in the center of the flower.

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THE primrose's nearest of kin, the cowslip, is counted among popular models in jewelry; so is the morning-glory and the dandelion. Perhaps most popular of all the flower jewelry, is that which represents apple blossoms, the wild rose and sweet peas.

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MUCH of the flower jewelry is silver, enameled to exactly simulate nature's production as regards color. One of the most perfect copies

in enamel ever seen by the writer, is a silver spray of apple blossoms in which is represented both full blown flowers and buds in various stages of development, the whole forming a unique brooch for summer gowns.

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TOO much praise cannot be awarded to the designers and manufacturers of this enamel flower jewelry. For once, at least, the fair patrons for whom it was designed appreciate the efforts made to please them, and are proving their appreciation by becoming generous purchasers of the same.

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THE popularity of the all-enamel jewelry does not appear to affect the sale of other sorts. There are some beautiful all-gold specimens on exhibition that please, with their graceful, easy semblance of real flowers in every detail of outline and form. Many of these have their value enhanced by a gem set center. All-silver jewelry, it ought to be added, is, much of it, equally meritorious and effective.

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THE daisy pin, made to order and presented to Miss Ellen Terry, the famous leading lady of Henry Irving's theatrical company, on her departure from New York, has proven a precedent for several unique productions in silk and gold. The pin in question consisted of a flower of white floss silk, throughout which sparkled tiny diamonds mounted on invisible gold wires buried in the silk floss. The stem of the flower, which was two inches long, was of gold, enameled to represent the green stem of nature. Other flower pins made on the same principle, are chrysanthemums, roses and nettles.

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THERE are rumors floating about to the effect that pendant ear rings and coral jewelry are to be revived. As regards the first rumor, there is no possible doubt that more ornate ear rings are already being worn, and there are more indications pointing to the revival of pendants than exist against it. As regards coral ornaments, the same cause that killed these may prevent their revival. That cause was the perfect imitation gained in celluloid. A leading jeweler and importer interviewed on the subject of the return of coral did not believe it would occur. My own opinion, which is based on the past history of fashions in dress, is that all fashions that have possessed sufficient merit to remain in use a long time, return after a certain lapse of years. Coral is becoming, and for many years was a favorite material for personal ornaments, and coral has been out of fashion a great while.

ELSIE BEE.

Designs for Manufacturers.



THIS HAS become the practice of late for trade papers in all the various lines of artistic industry, to present pages of designs for workmen to utilize. All the architects' journals, the art papers, building papers, etc., publish with each issue one or more pages of designs. THE CIRCULAR, following a custom that is only to be commended, presents each month a page of designs for the use of whoever may find a thought or a suggestion in them. The artist who makes them has been identified with the trade for many years, and makes a business of furnishing designs to manufacturing jewelers. We are asked occasionally why our artist does not reproduce drawings of popular styles of jewelry. The answer is that these designs are not intended to illustrate styles of goods that are already in the

market. In the first place it would not be fair to those who are making the goods, and who may have spent considerable money to obtain the design originally and to perfect the goods. In the second place our illustrations are proposed simply as suggestions for others to develop. If they could be found already in manufactured goods, their purpose would be defeated. They are simply suggestive, and it is not expected that every design we print will be found practicable in its entirety, but if someone catches from one of them a part that he can use in connection with something else, our work will not have been in vain. All manufacturers employ designers to get up new ideas for them, and one veteran in the business informs us that if his designer makes one design out of fifty that is found to be practicable or deserving of being made up, he is satisfied; than if fifty per cent. of the designs that are made into patterns catch the public taste and become salable goods, they are repaid for all the trouble and cost expended upon them. It is a difficult thing to devise new forms or styles for goods that are in the main so conventional as articles of jewelry are. A breastpin is a breastpin, precisely as a hat is a hat, and the modifications of form, style, decoration, etc., are limited, as they are in the production of a hat. So with other articles of jewelry; they are designed for certain uses, and their construction must conform to the requirements of the uses to which they are to be put. The man who can suggest something that will combine attractiveness with the required degree of usefulness, is to be regarded as a benefactor to the trade. The designs we present from month to month have all the merit of originality at least, and should they all prove desirable, combining artistic designing with practicability, they would stamp the artist as the most successful workman in this line to be found in the country. But no such degree of success is anticipated; all we seek for in this matter is to convey occasionally a suggestion, a hint that may be of some service to some of our readers. What may not strike the fancy of one may prove acceptable to another, and that other may not use the design that pleases him in its entirety, but make an adaptation of it. That such use has been made of these designs we are assured by different manufacturers, and in consequence we feel repaid for the expenditure we have made in this direction.

We desire the greatest variety obtainable in this department of designs, and hereby request all interested in the matter to send us designs for articles of jewelry that we can reproduce. We require them to be drawn in pen and ink—a clear black ink, the lines sharply defined—and one-third larger than the cut will be when printed. One can send enough to make a page similar to those we print, or a single design. We will pay a reasonable price for such as we use, and return any that we do not reproduce. Competition in this line of work cannot fail of being productive of good results, and will certainly benefit those who participate in it.



[From our Special Correspondent.]

DETROIT, May 22d, 1888.

The city of Detroit may well be called the most popular city of the west. With a frontage on one of the finest rivers in the country, broad, shady avenues, and its many fine buildings, all go to explain its rapid increase in population, which is from 116,000 in 1880 to 220,000 in 1887. It is quite a manufacturing city, besides being the distributing point for all kinds of merchandise for the state of Michigan. It has block after block of fine residences, all having fine

green lawns, and the people seem to take greater interest in keeping their houses and grounds in good repair than any other city in the west.

Detroit, too, has its number of wealthy people who do their share of European traveling every season, which places them in the front rank as judges of fine art and pottery, and it is remarkable to see the great improvements that the retailers in jewelry, pottery and bric-à-brac, have made in the past few years to keep apace with the demand for rich and novel designs, both useful and ornamental for house as well as the person.

The oldest as well as the largest Jewelry and art establishment in the city to day is the house of M. S. Smith & Co., established first at the corner of Woodward and Jefferson Avenues, by Mr. M. S. Smith in 1858, at which location they remained until about 1883, when they removed to their present location, Woodward Avenue, corner of State Street. This store was designed and erected for them after their own ideas, consequently they have one of the handsomest stores in the west. B. & W. B. Smith of New York fitted it up entirely, and the character of the work is first class. The main floor is 30 by 100 feet, and beautifully finished with black walnut side cases, french plate-glass and tile floors. Their two front windows are large, and the beautiful display of novelties, which are changed daily, make them very attractive to the people of the street, and the result is that there are crowds that stop there daily to inspect the new and novel goods. On the left as you enter the store is the watch department, then their jewelry cases, and in the wall cases, which are lined with black cloth, stands out boldly their beautiful display of silver and plated goods. To the right as you enter are the show cases with their diamond display; to the rear of these cases is the private diamond office. The cases on this side are devoted to the display of solid silver and cut-glass ware. They also have a long center case devoted to novelties in silver and ivory goods, mostly imported. At the rear of the store, handsomely partitioned off with black walnut and brass, are the offices of the manager and book-keepers, and a very pretty elevator which ascends to their art rooms on the second floor. This floor is devoted wholly to their display of imported clocks, bronzes, statuary, pottery, and fancy imported goods. A very pretty idea is carried out on this floor by running bars across from side to side, which are hung with drapery, and by drawing these curtains different lines of pottery are displayed separately upon handsome mantels, giving the customer the advantage of knowing just how this article will look on their own mantel at home. The rear of this floor is devoted to the optical goods, presided over by Mr. C. J. Pierce, an optician of considerable experience. Mr. M. S. Smith, who established this house, devotes his time now to the lumber interests in which he is largely interested, ranking as one of Detroit's millionaire lumbermen. Mr. Frank G. Smith is general manager, assisted by Mr. E. J. Smith, who has full charge of the diamond and silverware departments. The jewelry department is ably looked after by Mr. Chas. H. Morrison, whose long experience places him amongst the first as a buyer, and the success of this department speaks well for his taste and judgment. The plated ware department of this store is in charge of Mr. Charles Roe, who keeps his stock up to the high standard of the other departments. Mr. Ralph Dewey has charge of the art department. This firm has been very fortunate in securing the services of Mr. J. F. Taylor, who for a number of years was connected with Tiffany & Co. and Durand & Co., of New York. With this artist to superintend the designing of diamond mountings they are sure to be at the head in this department with new and novel ideas. Mr. E. J. and Frank G. Smith are the European buyers for this house, Mr. Frank G. Smith being now abroad in search of novelties for the fall season. They have the state agency for the celebrated Patek, Phillippe & Co. watch.

Another large store which the residents of Detroit may well be proud of is the establishment of Wright, Kay & Co., centrally located on Woodward Avenue and Campus Martius. The members of this firm are Mr. H. M. Wright, Mr. Jno. Kay and Mr. J. S.

Farrand (special). They occupy a large double building, 40 feet front by 100 deep. Their store is handsomely finished in black walnut, and has just been re-decorated and refinished. This firm organized several years ago, succeeding the old and long established house of Roehm & Wright, and are doing a most satisfactory business. They have a large circular counter case filled with rare and odd designs in diamond jewelry which first attracts your attention as you enter this store. To the left is the watch department, in charge of Mr. Wm. G. Hamburg, a person of long experience and quite a reputation, as an A-1 salesman. Next to this is the platedware department, which is well stocked with all the leading designs in platedware. This firm has quite a reputation on goods of their own plating, as they have an establishment for that purpose in the building. In the rear of the diamond cases comes their large and well selected stock of jewelry, in charge of Mr. Charles Warren, who is also a very able man in his position. To the right of the entrance you will see a fine line of solid silverware as complete as any in the city. Next to this is their stationery department supplied with Marcus Ward's, Crane's and Whiting's most desirable goods.

One of the attractions on this floor is their beautiful display of pottery, porcelain and cut-glass ware, imported direct from all the noted foreign manufactories, and comprises all the leading productions. At the rear of the store and facing out on Campus Martius is their private diamond office, in charge of Mr. John Kay, who is full manager of the establishment. Next to this comes the office of stock-keeper Mr. A. C. Kay. Here also are the stairs that lead to the second floor, the same size as the first, but handsomely divided off into apartments by columns and arched over with Moorish fret-work, hung with drapery which form elegant rooms for the display of their marble statuary, clocks, bronzes, and their beautiful and varied stock of lamps.

The optical department is also on this floor under the supervision of S. C. Dustin and Harry L. Dezing. Their watch repairing department is in charge of Mr. Alva T. Hill, who has a large local reputation as a first-class workman. Mr. H. M. Wright the senior member of this firm is now abroad purchasing their stock for the fall trade. They sell a watch with their own name on as their fine watch.

Mr. R. J. F. Roehm, after retiring from the firm of Roehm & Wright, went abroad for some time, and on his return established the house of Roehm & Son (associating with him his son Edward R. Roehm), No. 271 Woodward Ave., cor. Grand Circus Park. This large store was fitted up according to Mr. Roehm's idea of what a handsome store should be, and he has scored a great success. Having a desire to have something different in the way of fixtures he has finished his in cherry, natural color, French plate glass, and his ceilings and side walls are decorated in light blue. Occupying, as he does, the corner store of the building, he has a fine light at all times of the day, and his store is brilliantly illuminated by electricity at night. He has a fine and well selected stock of jewelry, diamonds, silver and platedware, pottery and cut glass, and makes a specialty of the optical business, which is in charge of Mr. E. Truba. His statuary is by the artist, Wm. Cowper, Florence, Italy. His fine watch is the celebrated Vacheron and Constantin watch, and his watch department is in charge of Mr. E. W. Hamilton. Mr. Roehm goes abroad every year in search of European novelties. Roehm & Son are ably assisted by Mr. H. R. Hukins, of New York, who has had experience both abroad and here as a salesman, and is considered an authority on diamonds.

F. Rolshoven & Co. have a new and handsome store, No. 166 Woodward Ave., cor. Gratiot. This firm is composed of F. & H. A. Rolshoven. This business was established in 1860 by Mr. F. Rolshoven on Woodward Ave. near Jefferson, where he did a very successful business. He moved into this new store recently where he would have increased facilities for the display of his handsome stock of diamonds, watches, jewelry and silver ware. He handles the American watches only and is a direct importer of clocks and bronzes. His store is finished in black walnut and well lighted.

Troub Bros., 118 Woodward Ave. This business was established about 12 years ago by J. F. and C. M. Troub. They have a large store well stocked and are doing a very satisfactory business. They keep a large stock of diamonds, watches, jewelry and plated ware, are direct importers and also manufacturers, making a specialty of fancy settings for diamonds and precious stones.

The wholesale business of Detroit is looked after by Kennedy & Koester, 201 Jefferson Ave. They are manufacturers as well as jobbers. They employ one traveler who covers the states of Michigan and Ohio. Mr. Kennedy has been in the manufacturing business for the last 25 years, and make a specialty of rings and diamond mountings. They report a very satisfactory business.

HARD SOLDER.

Free Hand and Mechanical Drawing.

BY EXPERT.



REES in water color painting are produced by washes to represent masses and afterward, these masses, broken by touches of shadow and taking out, color from these washes. I will describe the general methods used and then explain the details. I am well aware that it is eminently difficult to convey the methods of technical details, and I feel it all the more so from reading some of our best authors on this very subject, as instanced by looking over Barnard's book on water color painting. Now Mr. Barnard is one of the most skilful and most successful teachers of the art in England, and when reading his description of brush practice, I fancied how a student must be puzzled

who knows nothing about the subject in a practical sense. With this apology for being a trifle prolix, I will try to describe how to paint trees.

Where we obtain the outline of our objects with the glass plate coated with glutin, as described early in these papers, it will be easier to conceive of masses than if a mere sketch was made by ordinary methods, as we readily see which side of the tree lighted up and which side in shadow, and can so delineate our sketch (outline) as to convey a good sense of parts in light and shadow. In making sketches for the purpose of study (artists call them studies), that is, sketches the object of which is to establish ourselves in a particular method of working, or it might be to give ourselves power to express our impressions pictorially; we should have always an object in view. What I mean by this is to choose an illustration applicable to the subject we are talking about, which would be, if we were learning to paint trees, to select a tree of given species, and get far enough away from it so the individual leaves could not be distinguished, and we could only see the general form and which side was in shadow. The trunk and larger limbs could also be located, but the leaves would only be seen in masses of green more or less illuminated according to how they were located relative to the light. A person familiar with forests and the different species of trees would still have no difficulty in naming the kind of tree it was, that is if an oak, elm or any other species of tree with which he was acquainted, by the form and set of the top and mode of branching. Now this is precisely what an artist needs to study, and make himself familiar with. True, if the pupil uses the glass plate as directed the outline

must be correct, but at the same time a careful study and familiarizing ones self with the form and habit of any species of tree stamps an air of truthfulness to pictorial work, no effort will if we rigidly attempt to hold ourselves to set form. And still more, no mechanical device to aid one in drawing should be used after the pupil acquires any considerable degree of skill. To go on with our tree select, as I said, one, at say a distance of 200 yards, and lay in your outlines. Allow me to say here, no studies of trees and like should ever be made on pure white paper—always lay in a background of cloud or distance; it makes an immense difference about the look and relief. Greens for trees in middle distance are composed of some rather neutral blue like indigo, and quiet yellow, as we find in yellow ochre. If we wash the masses in over a sky of rather an intense blue, we will find our foliage taking on a cold look, and for this reason it is well to mix our tint well, inclining toward what our judgment tells us is too yellow, then the cool blue of the sky will bring it about right. High lights, such as represent foliage, exposed to sunshine can be brought out after the full tint is laid by wetting such places as are to represent the high light with a pencil brush dipped in pure water, and after a second or two give a quick rub with a clean soft cotton rag, when the color will be removed to almost white paper. This little trick of taking of color is very useful, too, in foregrounds, and bringing out sharp, crisp effects on rocks and trunks of trees. The shadowed side of a tree including the underside of branches are well represented by washes of sepia or brown madder. The branches, except they are very large, are not taken into account when laying the tint for the masses of foliage; a stroke with a wet brush, a wipe with the clean rag, and we have the start for a limb of even a lighter tint than the foliage. I intend to give drawings in black and white which convey hints at least of the methods I have described, but preliminary to such drawing a certain amount of technical disciplining is necessary, like in learning, to write the elements of the letters. First then the letters. Some of my readers who may have been practicing drawing from these instructions may say to themselves I have been drawing and can place the lights and shadows all right, and all I need now is only to know how to mix the colors and handle the brush, and I am all right. Well, this mixing the colors and handling the brush is just what I insist upon being done. Water colors must be worked quickly or their peculiar charm is gone. A great deal of labor can be bestowed on a water color drawing in the foreground, but in the middle distance the effects are best made out by broad methods produced by washes. For this reason I have suggested a tree in this position as being a desirable subject for the first efforts after a little preliminary practice such as is shown at Fig. 1. After washing in the sky with cobalt blue and a little light red, prepare a mixture of indigo and yellow ochre, and with a pencil brush about $\frac{1}{16}$ of an inch in diameter wash in the effect of a tree something in the manner shown in the cut. For the darkest shade a little sepia can be added. In addition to the little bit of brush practice select a specimen of mid distance foliage from any of our best magazines and try and reproduce the effects in colors given by using cobalt blue and gamboge, raw sienna and prussia blue. Working up the shadows brown madder, rose madder and indigo. In all the combinations seek to copy nature as you see it. Still keep it in mind that pure high greens, such as result by combining gamboge and prussian blue, seldom really occur. Paint on a low, quiet key, reserving the pure light tints for a few bright touches in the foreground.

TO TIGHTEN A CANON PINION.—The canon pinion is sometimes too loose upon the center arbor. Grip the arbor lightly with a pair of cutting nippers, and by a single turn of the nippers around the arbor, cut or raise a small thread thereon.

Hints on Window Dressing.



SEVERAL correspondents have written to thank us for the article in the May number of THE CIRCULAR on window dressing, and asking us to go a little further into details. It is almost impossible to give an intelligent description of an attractive show window, because so much depends upon the harmonious arrangement of colors that a pen picture in black and white fails to give a correct idea of it. We stated previously that the most artistically arranged windows were those where some prominent article was made the central figure, the objective point, and other articles of a similar nature arranged around it in such a manner as to direct attention to the main article, by being in harmony with it, and not diverting attention from it by any incongruity of color, form or design. Ladies of refined taste, in selecting a costume for themselves, are very careful to choose for the various articles of the toilet those that harmonize in color and form; they even go to the extent of having gloves, shoes, parasol, etc., made from the same material that the dress is made of, while the trimmings of the hat are in keeping with the whole costume. No one thing is so pronounced in color or form as to draw attention to that particular thing to the neglect of the rest of the costume. One involuntarily remarks of such a costume: "That lady is well dressed; there is good taste." That is the idea we wish to convey in regard to the dressing of show windows; everything should be in harmony both in character of goods, form, color, etc.; nothing offensively prominent, but the arrangement of the whole so artistic that each article seems to have been specially made for the place it occupies.

We noticed a very attractive window in Maiden Lane a few days since. Behind the large plate glass windows—which, by the way, were as clean and polished as a vigorous application of whiting and "elbow grease" could make them—the space had been built up on the sides with low shelves or benches, which, with the bottom and sides, were lined with rich brown plush. Mirrors were placed at the sides; on the raised benches were placed half a dozen fine clocks of various patterns, some in colored marble, others in bronze, having classic figures surmounting them; these were arranged tastefully, the more prominent one being in the center, the smaller ones approaching more nearly to the front of the window on each side of the central clock. These formed, as it were, a background, reflected and duplicated in the mirrors. Upon the soft brown plush floor of the window there were grouped a few elegant specimens of gold goods, a rich diamond necklace being the central and most conspicuous article, near to which were bracelets and ear rings to correspond. A diamond brooch and a lace pin completed the display, these few articles occupying the entire space at the bottom of the window. Here was, in fact, a double display; one of clocks and the other of fine jewelry, so arranged that each contributed to add to the attractiveness of the other. Even the casual passer could not fail to be impressed with the fact that these were rich and desirable goods, worth stopping to examine more closely. Still another window in the Lane is decorated with handsome plush, with harmonious portiers or tapestry curtains at the back, while the space thus set apart for the window display is occupied by a careful arrangement of fine goods, the exhibit being changed almost daily. On one occasion it will present an appearance of massiveness, being occupied with heavy articles of silverware and bric-a-brac, statuettes, urns, vases,

etc., in fine pottery or bronze; another day the display will consist of fine jewelry, artistically arranged and made attractive by tasteful surroundings. Nearby is another window that looks as though the goods had been pitched into it with a pitchfork, and no change made in it for months. The window is nothing but boards and the dust of weeks lies piled up in the corners. This house does a large business through its salesmen on the road, but transient customers would turn away after one glance at the show window, convinced that good taste did not abide there.

One correspondent writes that he has his show window dressed freshly every day, although he resides in a comparatively small place; we should accept this fact as evidence that he likes his calling, and that he desires to make out of it the most possible. We may say right here that no person is competent to dress a show window to the best advantage who is not himself a lover of the beautiful, has an artistic eye, and takes a lively interest in his business. Too often the work of window dressing is left to the errand boy, while, in fact, it is a task the proprietor himself should take pride in. He is best acquainted with the goods he has in stock, the relative value of the different articles, and should be better informed as to the kind of goods that are in vogue and likely to catch the popular taste. Very often the artistic arrangement of old goods in a show window, after they have been concealed on the back shelves for a time as out of style, will catch the eye of a customer who desires just that particular style of goods, and is delighted to have them brought to his attention. The best way to work off old stock is to brighten it up occasionally and bring it prominently to the front, and let it take its chances as though it was something new.

But the idea of harmony and artistic arrangement of goods in stock should not be confined exclusively to the show window; the same display of good taste and care should be found in the arrangement of the show cases inside the store and upon the shelves as in the show window. The person charged with the duty of dressing the store should make a constant study of the subject and be constantly thinking of how he is to produce new effects. Change the goods in the show cases; bring to the front things that have been in the dark corners, and let every day witness some new effect in the arrangement of your stock. Another capital idea is to get a local notice in the morning paper simply saying: "For an exhibition of the latest styles in jewelry, see Smith's show window this morning." Pique public curiosity by a little notice of this kind, and then be sure that your window will repay those who come to see it. This matter of inducing the public to look at your goods after you have secured them is half the art of selling, and one to which altogether too little attention is paid. Arranging goods attractively is no boy's play, but will well repay the utmost care that can be given to it. In other columns "Elsie Bee" gives her views upon this subject. "Show windows" from a ladies' standpoint is something the entire trade ought to know about.



[From our Special Correspondent.]

PROVIDENCE, May 15, 1888.

The month past has been the poorest for business of any since the 1st of January, and, in fact, since the year 1879, and the manufacturer is laying on his oars and waiting like Micawber for the tide of time to turn something up. With the exception of getting out some new dies and patterns to start the fall season with, he has done little of late more than to eat and sleep; in a great many instances he has

closed down his works for from one to six weeks, or about June 10, when he confidently expects that business will commence, if not with a boom, in a more steady sort of a manner, such as will be able to hold out to the end of the season. Collections during the latter part of the month of April and first of May have been poor and unsatisfactory, speaking in a general way; of course, some have been as prompt as ever, but the majority have been slow and allowed accounts to become badly overdue in some instances.

Trade paper has been used to some extent in settlement of accounts due of late, and especially was this the case with a firm who so recently failed that the readers of THE CIRCULAR will not soon forget the fact.

Failures in the trade during the month are reported to be many, but the largest of which is that of Slemmons & Ganter, of No. 77 5th avenue, Pittsburgh, Pa.

The case of Wm. H. Joyce vs. Sylvester G. Morton (of the firm of Martin Copeland & Co.), has been up before the Supreme Court the past week. The case is brought to recover damages sustained by plaintiff's son while standing on the wharf at Silver Spring, and putting his foot in a crack at the moment of a steamer touching against the wharf, thereby crushing the same. The case occupied parts of three days' time with the jury, when they rendered a verdict in favor of the plaintiff for \$1,000.

On May 9 the manufacturers located here were somewhat surprised to hear that Slemmons & Ganter, of Pittsburgh, Pa., one of the largest jobbing houses in Western Pennsylvania, was financially embarrassed. The assets of the firm are as follows, viz.: Store fixtures, \$2,290.81; real estate, \$151; cash, \$288.23; accounts, \$12,287.33; bills receivable, \$18.32; mdse., \$30,584.82, making a total of assets \$54,620.51. The liabilities: Accounts, \$22,660.88; bills payable, \$29,830.47, making a total of \$52,491.35, or assets over liabilities, \$2,129.16.

D. W. C. Crosby & Co., dealers in jewelry, at Nos. 1 and 3 Tremont street, Boston, are closing up their business; the manufacturers located in this city have agreed to accept 50 cents on the dollar.

Burt & Hurlburt, of Detroit, who failed about a month ago, are offering to compromise claims against them for 33 1/3 per cent., which will probably be the best offer that creditors will have extended them, and be good judgment to accept of, as "half a loaf is better than no bread."

B. E. Daggett & Co., of No. 44 Arnold street, are showing a large line of rings for the spring season.

The quarterly meeting of the Manufacturing Jewelers' Board of Trade was held on Monday, April 30, and the following circular issued:

PROVIDENCE, R. I., May 1, 1888.

To the Jobbing Jewelers of the United States and Canada:

Gentlemen—The following action of the Manufacturing Jewelers' Board of Trade, of Providence, R. I., was adopted at a session of that organization April 30, 1888, and by vote is communicated for your information.

- 1st. That all transactions concerning the sale of goods shall be governed by definite terms, such terms to be distinctly stated upon invoices.
- 2d. Terms having been once made should be rigidly adhered to, and satisfactory settlement effected at maturity. Parties refusing to make such settlement shall be reported to the Board of Trade.
- 3d. On and after June 15, 1888, express charges will not be paid or allowed on orders under twenty-five dollars, net value.

Very respectfully,

MARCUS W. MORTON, Secretary.

The above resolution, adopted by vote on the 30th ultimo, speaks for itself, and is the first step in the right direction, and one which should have been taken months ago, but, as the saying goes, "better

late than not at all," THE CIRCULAR congratulates Secretary Morton on the success attending his efforts of the past few months in the interests of the manufacturers to correct whatever abuses there may be in the trade, and on which THE CIRCULAR has said so much through these columns for a year or more past.

Mr. C. Anthony Fowler, of Fowler Brothers, will, with his family, go to the "Wentworth" at Portsmouth, N. H., for the summer. Mr. Fowler will be able to do all the blue fishing that he cares to while at the "Wentworth," for there are no better grounds on the coast where the enticing sport can be indulged in than at this celebrated resort.

Mr. Byron E. Daggett with his family, have taken up their summer residence at Shawomett Beach.

Mr. E. S. Dodge and Mr. J. Duckworth, of this city, arrived from Europe per steamer *La Gascogne*, of the French line, on May 6.

Mr. Edwin S. Case, formerly of the firm of E. S. Case & Co., of No. 111 Summer street, died last week at his residence, No. 86 Somerset street, of rheumatism of the heart. Mr. Case was born in 1823; about five years ago he formed a co-partnership with the late Frederick W. Allen, of Royce, Allen & Co., under the firm name of E. S. Case & Co. In 1887 Mr. Allen withdrew from the firm, and a partnership was formed under the same name by Mr. Case, Mr. John L. Mason and Mr. Clark P. Tillinghast.

Potter, Read & Co. have given a chattel mortgage for \$3,500.

Mr. M. Fitzgerald has extended to the members of the Manufacturing Jewelers' Board of Trade an invitation to accept of his hospitality on June 8, at Pawtuxet, as the following circular (sent to members) will show:

PROVIDENCE, R. I., May 7, 1888.

Gentlemen—At a meeting of the Board of Trade, held on the 30th ult., a resolution was unanimously adopted accepting the invitation of Mr. M. Fitzgerald, one of our members, to attend a Rhode Island banquet, to be served on the shores of the Pawtuxet River, three miles from the center of Providence, at 2 P. M., Friday, June 8, 1888. You will please notify the Secretary of the Board, on or before June 1, whether your firm will be represented by one or two members. Good speakers are expected to be present who will discuss the living topics of interest to all, and a general re-union of the members is looked for. Members will assemble at the rooms of the Board at 1 P. M. sharp, where horse cars will be in waiting to take guests to the grounds, and will return to the city about 7 P. M. Hoping you may find it convenient to be present at this, our first social re union, is the wish of yours respectfully, Joseph H. Fanning, Ralph S. Hamilton, Jr., Hiram Howard, *Reception Committee of the Board*.

MARCUS W. MORTON, *Secretary*.

A chattel mortgage against Mr. F. J. Favro, who lost about all he owned in the Eddy street fire, has been recorded for \$150.

An inventory of the estate of Joseph B. Mathewson has been filed in the Municipal Court for the sum of \$38,458.58. The administrator will be allowed to sell the property at the price of the inventory.

Mr. H. S. Dorchester has been elected a member of the Board of Trustees of the Providence Homœopathic Dispensary.

Mr. Henry Tilden, of Tilden, Thurber & Co., sailed for Europe on Thursday, April 26. He will visit Paris, Berlin and other cities in the interests of the firm, looking for novelties.

Mr. Chas. F. Irons and wife returned from their southern trip on Saturday, as far as Florida, after a very pleasant and enjoyable sojourn of about two months.

Mr. Edwin Lowe, we are pleased to announce, has improved very much in health during the past month, and his many friends are gratified to again see his pleasant face on the street.

Mr. Thos. W. Lind has been rusticated at Hamilton, Bermuda, for some weeks, and is feeling much benefitted by the change of climate.

Mr. Fred. I. Marcy has been elected as a delegate to the National Republican Convention, to be held in the city of Chicago on June 5, to nominate a Republican candidate to be voted for on Tuesday, November 5 next, for President of the United States.

Fowler Brothers, formerly of No. 176 Broadway, have removed their office to No. 198 Broadway, in the Dennison Manufacturing Co.'s building, where they have elegantly fitted quarters to accommodate their extensive and growing business.

Howard & Son, of No. 102 Orange street, it is reported will occupy when finished the fourth floor of the building now in course of erection by Wm. H. Robinson & Co., on the site of the Chace Block, corner of Eddy and Fountain streets. It is confidently expected that Howard & Son will have a model factory, supplied with all the latest conveniences and most improved machinery, and one of the most elegantly furnished offices to be found amongst the manufacturing jewelers.

Mr. Joshua Lothrop, of Wm. A. Beatty & Co., has been confined to his home for some weeks, but is now about again feeling as well as ever.

Fred. I. Marcy & Co. have removed their New York office from No. 1½ Maiden Lane to No. 198 Broadway, in the Dennison Manufacturing Co.'s building, where they will have greatly increased facilities for transacting their business.

It is reported that Billings Brothers will soon erect a building 100 feet front and 35 feet deep on Eddy street, on the site of the late fire, to be rented for shops for the manufacture of jewelry.

At a meeting of the Board of Directors of the Gorham Manufacturing Co., held last Friday, the resignation of Mr. Gorham Thurber, of the firm of Tilden, Thurber & Co., as Treasurer, was accepted, and Mr. Edward Holbrook was elected to fill the office for the unexpired term.

Richmond & Co., of No. 102 Friendship street, take the lead in diamond and imitation rings, and their line will be found to be as full and complete as any in the country.

Ostby & Barton, of No. 80 Clifford street, makers of solid gold and engraved rings, report business to be good in their line and have a large force of hands employed, notwithstanding that so many concerns are crying "dull times and no business."

Mr. W. A. Burrows, of Chicago, who recently failed, owed members of the Manufacturing Jewelers' Board of Trade of this city about \$3,000.

FAIRFAX.

The Jewelers' Security Alliance.

President, DAVID C. DODD, JR.

First Vice-President, AUGUSTUS K. SLOAN.....Of Carter, Sloan & Co.

Second Vice-President, HENRY HAYES.....Of Wheeler, Parsons & Hayes.

Third Vice-President, DAVID UNTERMAYER.....Of Keller & Untermeyer.

Treasurer, W. C. KIMBALL.....Of Strange & Brother.

Secretary, GEO. H. HODENPYL.....Of Hodenpyl & Sons.

EXECUTIVE COMMITTEE.

J. B. BOWDEN, *Chairman*.....Of J. B. Bowden & Co.

C. G. ALFORD.....Of C. G. Alford & Co.

N. H. WHITE.....Of N. H. White.

CHAS. G. LEWIS.....Of Randel, Baremore & Billings.

F. KROEBER.....Of F. Kroeber Clock Co.

SILAS STUART.....Of Silas Stuart.

EXAMINING FINANCE COMMITTEE.

EDWARD SMITH.....Of Smith, Knapp & Co.

A. JORALEMON.....Of A. Joralemon & Co.

For further information, Application Blanks for Membership, By-Laws, etc., Address
P. O. Box 3277. 170 Broadway, New York.

At a special meeting of the Executive Committee held at the Alliance office, April 27, 1888, there were present President Dodd, J. B. Bowden, Chairman, Messrs. Alford, White, Kroeber and Secretary Champenois.

The following were admitted to membership: C. S. Clinton,

McDonald Block, No. Plaite, Neb.; Geo. Durner, 680 3d street, Milwaukee, Wis.; Doring Bros., 365 Fulton street, Troy, N. Y.; Samuel J. Downs, 4,030 Market street, Philadelphia, Pa.; Emanuel M. Gattle, 1,167 Broadway, New York City; Gould Kitt, Weir City, Kansas; R. Harris & Co., 432 Seventh street, N. W., Washington, D. C.; Chas. Keswodel, 119 W. Eutaw street, Baltimore, Md.; Kerr & Battin, 338 Mulberry street, Newark, N. J.; Edward Kuenne, 649 Light street, Baltimore, Md.; H. H. Robinson, 8 Bridge street, Presque Isle, Me.; John W. Ruth & Son, Depot street, Shelbyville, Tenn.; L. Lelong & Brother, S. W. cor. Halsey and Marshall streets, Newark, N. J.; Mous. S. Page & Co., 1 Salem street, Boston, Mass.; Smith & Patterson, 44 Summer street, Boston, Mass.; Chas. S. Saxton Co., 408 Main street, Springfield, Mass.; Sheldon Swope & Co., 408 Main street, Terre Haute, Ind.; H. S. Townsend, 307 Hanover street, Boston, Mass.; James E. Tyler, 807 E. Main street, Richmond, Va.; Joseph Muhr, S. W. cor. Broad and Race streets, Philadelphia, Pa.; Frank Weidenfeld, 189 Warren street, Hudson, N. Y.; Philipp Zuellner, 135 W. 2d street, Portsmouth, Ohio; M. E. Roberts, 332 Main street, Danville, Va.; Henry F. C. Schneider, 808 Main street, Dubuque, Iowa; G. W. Goodhue, Main street, Marchias, Me.; Theodore Schmidt, 1,107 Broadway, Brooklyn, N. Y.; Jacob Morch, 110 Broadway, Brooklyn, E. D.

At a special meeting of the Executive Committee held at the Alliance office on Tuesday, May 1, at the close of the annual meeting, the following were admitted to membership: Frederick Holthausen, 375 Manhattan avenue, Brooklyn, N. Y.; W. & E. Schmidt, 308 Third street, Milwaukee, Wis.; Alden P. Sherburne, 71 N. Main street, Concord, N. H.; Fred. Gossmann, Somerville, Tenn.; G. W. Marquardt & Sons, 408-410 5th street, Des Moines, Iowa; Fritz T. Jeannot, 5 W. Federal street, Youngstown, Ohio; Donald Fraser, Lancaster avenue, Bryn Mawr, Pa.

At the annual meeting of the Alliance, the following motion was made: "On motion a vote of thanks was extended to the different trade journals for the interest they have displayed in the Alliance, and the report of the meetings they have published during the year."

At the regular monthly meeting of the Executive Committee, held at the Alliance office on the 11th inst., there were present J. B. Bowden, Chairman, Messrs. White, Lewis, Stuart and Secretary Hodenpyl.

The following were admitted to membership: S. P. Hosmer, Tecumseh, Michigan; Arthur A. Poole, Main street, Washington, Pa.; Henry Bohm, 1,105 16th street, Denver, Col.; Wm. Kendricks' Sons, 336 Fourth avenue, Louisville, Ky.; James E. Webster, 22 Nashua street, Milford, N. H.; Nathan S. Daniels, Main street, Concord, Mass.



[From our Special Correspondent.]

LONDON, May 9, 1888.

I recently visited many manufactories in Clerkenwell and the neighborhood, and I was not encouraged to take a very hopeful view of trade, as it was then anything but brisk. The only matter for satisfaction is the firmly expressed belief that we soon *shall* have a good trade. I have entertained that opinion myself for some time, but the town has not yet been taken. Many of the factors of Hatton Garden and adjacent streets are fairly busy, but they evince no inclination to buy for stock. They prefer having goods on approval as much as they can.

There are some novelties making their appearance in spite of all

depression. Piscatorial subjects are some of the latest designs for jewelry. A scarf pin formed of a crab in green enamel, with claws and edging of gold; a brooch formed of two gold fishing rods crossed, supporting a fish and fish bag of the same material, and a fishing rod of gold with a suspended line arranged as a scarf pin, are all new.

Some of the gem ring makers are active, but the work they do is at very low prices, and the system of long credit adds very greatly to their risk.

Silver jewelry has not experienced the demand that was expected, and consequently there is a great quantity thrown on the market at reduced prices, and it does not sell even with this incentive. But as a set off against this silver, plate work is becoming fashionable again. It is very customary now to make the most of all silver articles one possesses, and I confess when a table is nicely laid out, the addition of sundry silver ornaments adds to the attraction of even the most choice glass and china. I saw a good effect with this arrangement at a small dinner the other evening and admired it. On the same occasion I saw a novelty that I may be excused mentioning, although it does not come under the designation of jewelry. A posey of natural flowers with an electric light in the center of the bouquet. Partially hidden by the flowers (intentionally so) the effect was pretty. I did not approve the idea. Flowers have charms and brilliancy and perfumes of their own without any artificial accessories. At the same time, conservatories, balconies and corridors adjacent to a ballroom would look very brilliant with a score or two of the visitors holding electric lights in their bouquets.

The hopes and fears of our manufacturing jewelers have alternated with unusual rapidity during the past few months. The jewelry-purchasing classes have been reluctant to spend much money except for absolute requisites. The luxuries or extras to which they have been in the habit of treating themselves at the spring season are in very little demand. Two causes have contributed to this. One is that as one of the vagaries of our fickle climate, we seem to be required to omit spring altogether this year. We have been and are still looking out for it, but it is now most likely that summer will be here first. The other reason for the present scant demand for jewelry is that the critical position of the German Emperor makes it possible that at any day our court may go into mourning and then "society" and its multitude of satellites will follow the court lead.

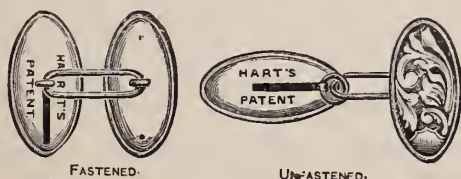
Many manufacturing jewelers complain loudly of the falling off in their trade. There was an improvement at the beginning of the year and no doubt makers were expecting it not only to be maintained but increased. It is a pity that the habit of complaining has become so chronic among our manufacturers, that those of us who move amongst them freely and regularly, do not think nearly so much of their grumbling as we should if the grocer or the tailor told us there was "very little business doing, and what there was, was not worth doing." Our jewelry trade has been and is in a very low state, but I cannot think it is so bad as it is painted. I judge from what I see, and though there is not any specially great demand for any one class of goods, yet many manufacturers seem to be fairly occupied—the colored gold makers for instance. The wedding ring trade has also had a recent impetus. We have had a marked improvement in trade generally and I hope the manufacturers in our industry will admit it, as soon as they participate in it, and so encourage one another. When I was on the road it was the ambition of travellers to recount in the commercial rooms of their hotel the good lines they had taken during the day. Now, the reverse is the practice. I wish those in the trade would endeavor to encourage and not discourage each other. The habit of waiting makes them sometimes despondent when they might really be hopeful. Depression of spirits is contagious and so is elation. If our makers and traders would dwell more on their successes, however small they may be, they would do much to incite active and hopeful exertion in others.

We are still bothered by the new Merchandise Marks Act. It was considered a curious production when first formulated, but in prac-

tice it has proved occasionally more curious still. A manufacturer sent some samples of jewelry to a firm on the continent, and they were stamped with his name and (European) address—such as “Williams—London.” In due time these samples were returned with orders for some of them. The customs refused to pass them. Taking them for foreign imports the officers said they must be stamped with the place of origin, and they insinuated that the English name of firm and place was calculated to deceive. Take another effect of this act; the authorities provided special Hall Marks for foreign watch cases. The stamps and everything else were ready on the first of January, yet there has not been a single foreign case presented for assay at Goldsmiths' Hall since the regulation was established. The silver jewelry trade has been rather more active, but from what I hear the manufacturers have cut prices so fine that they have really no profit. The evil effects of this yielding to pressure from the factors, have so frequently manifested themselves, that one wonders makers do not grow firmer. It is natural to secure as much business as possible, always supposing there is some profit, but where there is no profit it is suicidal to take orders.

The season has not been so prolific of useful personal novelties, as usual. There have been some really fine productions in the way of caskets for addresses, etc., and some athletic competition prizes, but not so many new articles for personal ornament. There are some novel applications of watch movements. A brooch watch—following the fashion of the watches in wristlets—is more curious than useful. There is something rather incongruous in a lady wearing a watch in such a position as to allow others to tell the time by it, while she herself could not. A more sensible arrangement is a small watch in a finger ring; I saw a neat specimen of these miniature timekeepers yesterday. This was a present and was much appreciated. For those wishing to give some article of jewelry as a memento a ring-watch is at once convenient, useful and novel.

The recent disgraceful revival of prize-fighting—for which we are in some measure indebted to your once valiant (?) Mr. Sullivan—has been the cause of the production of pugilistic portrait watches. These are watches with the portraits of some of the favorite champions on the dials. Another sporting production is a very pretty brooch formed of two horseshoes of platinum united at the center with a gold riding whip, above which there is a jockey cap of opals and diamonds. In my last I stated that double-links are just now in great favor. Several varieties have been shown me this week, but I have been most interested in one that is called “Hart's Patent Sleeve Link,” named after the patentee, Mr. Thomas Hart, of Heathcote street, Mecklinburg square, W. E. Though quite new to me I find this was patented so long ago as July last. As a cuff fastener this seems to me far superior to any solitaire. This is saying a great deal after a long acquaintance with “Wests.” In Hart's patent, the link has the appearance of the ordinary sleeve links at the front. The useful part is a sliding shank at the back. There is a box fitted



inside the link in which there is a pressure spring, grooved in such a manner that when the slide is pushed it falls into place, and is held securely. All the work is from the interior. The illustrations I send show the arrangement clearly. The principle is applicable to dress studs, collar studs, purse and glove fastenings and buttons of every description. The patent is only just being properly marked, so you will hear more about it from other sources.

Mr. Walker, of Cornhill, has now on exhibition a magnificent diamond, which has received the name of the Gor-do-Norr. This is the property of the owners of an Indian diamond mine, who are seeking to form a limited company. The stone when in the rough

weighed $67\frac{3}{8}$ karats, and is now $24\frac{1}{8}$ karats, having been cut into a magnificent brilliant. The price set upon it is £15,000.

It is remarkable that most of the most famous diamonds came from India—“The Great Mogul,” “The Great Table,” “The Koh-i-nor,” “The Regent,” and others.

We have had some little excitement over our Welsh gold mines, of which I will speak in my next.

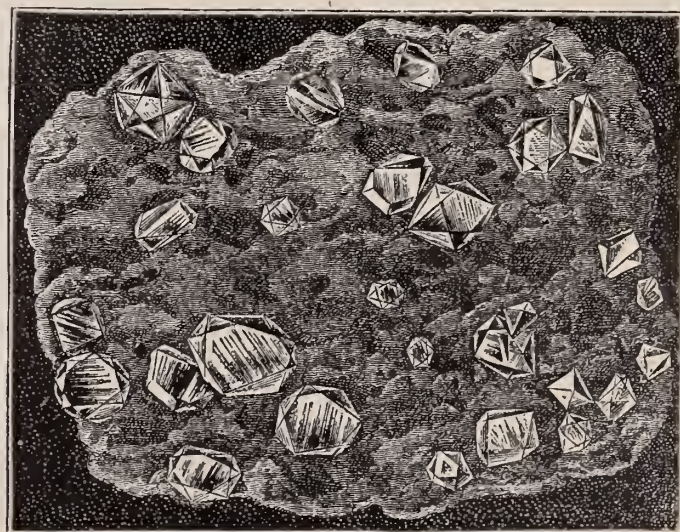
VIGILANT.

Artificial Rubies.



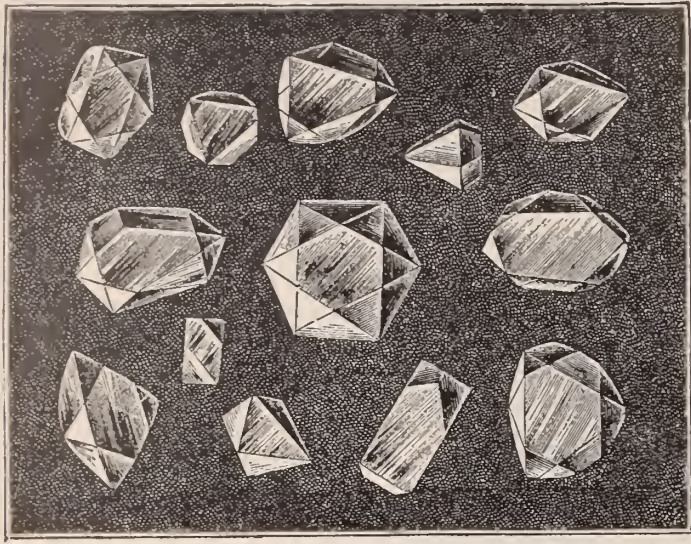
VERY small crystals of artificial rubies were obtained by Fremy in 1877. In 1887 he resumed his experiments, and, with the assistance of Mr. Verneuil, has succeeded in obtaining beautiful and comparatively large crystals. *La Nature* describes his experiments according to the report given to the Academy of Sciences of Paris, illustrated by cuts, which we reproduce here. On Feb. 27th, Fremy and Verneuil presented to the academy these crystals, which were obtained by the action of fluorides upon aluminium. Fluoride of barium was made to act upon aluminium containing traces of bichromate of potassium. The regularity of crystallization which

was obtained after numerous experiments, was found to depend principally upon the fire, which regulates and varies the chemical action. The crystals obtained in 1877 were laminated and friable. They were very thin, and embedded in a vitreous mass, which rendered it almost impossible to isolate them. Besides this, their chemical composition varied to a certain extent. By the new process they are easily separated from the porous matrix in which they are formed. The matrix is thrown into water, which is violently



agitated. While the light matrix is broken and remains suspended, the rubies settle down on the bottom of the glass. They are very clean, and it was found unnecessary to apply any acids for further cleansing. They are rhombohedral and exactly like natural rubies. Numerous analyses showed that they did not retain a trace of baryte, and that they were formed by pure aluminium colored by traces of chrome. The crystals are regular and of adamantine lustre. They are of perfect transparency, as hard as natural rubies, and cut topaz,

Like the natural rubies, they turn black on being heated, but resume their color after getting cold again. Having thus produced by synthesis rhombohedral crystals of rubies with all the physical and chemical properties of the most beautiful natural rubies, and forming them in a matrix which may be compared to that enclosing the natural mineral. Freymy and Vernueil believe they have definitely



settled the question of the origin of rubies. So far, the experiments have been made with 50 grams of material only, and the crystals have therefore been comparatively small, not exceeding 0.02 of an inch in diameter. The authors, however, propose to continue their experiments on a larger scale, and expect to be able to make rubies of large dimensions.

The Government and Business.

THERE HAS been a general complaint in all lines of business during the past few months of unusual dullness, and the government is held responsible for it to a considerable extent. Not only has Congress done nothing thus far to unlock the immense surplus held in the Treasury, whereby it is withdrawn from circulation, but it has added to the discouragements of the situation by prolonging agitation of the tariff measures that have been threatening for some months. Because there is a surplus in the Treasury, derived from taxation, the tariff tinkers have proposed such modifications of the tariff as to upset all calculations on the part of a great number of capitalists interested in our leading productive enterprises. They have been forced to reduce their productive capacity lest some change in the tariff would subject them to a competition that would involve them in ruin. Their action has disturbed all interests contingent upon theirs, has led to the enforced idleness of a large number of workmen, with consequent dissatisfaction and suffering. Not one of the several measures before Congress, designed to bring relief to commercial and industrial interests, has been given the slightest consideration during the present session, and there is little hope that they will receive it—members have been too busy thus far in working up presidential candidates to devote any time to the actual needs of the country.

As is well known, there has been a long period of almost absolute stagnation in Wall street for several months, such transactions as have taken place showing a considerable falling off in the value placed by the public upon leading securities. This is not due to any decrease in the actual value of any of the properties involved, but to a lack of confidence in the future, no one being able to predict what may be their earning capacity hereafter. The great disturbances on various lines of railroads and the hostile attitude assumed by organ-

ized bodies of workingmen, have added to the complications of the times, giving anything but a flattering outlook for the immediate future. Apropos to the present depression, Fisk & Sons, the well-known bankers and dealers in government bonds, have issued a striking circular headed "What is the Trouble?" thus propounding a query that they proceed to answer: They say: "It is well to seriously ask what is the trouble when all securities, stocks and bonds, and even government bonds, are steadily declining—when all products, when the great staple, iron, when wages, as well, of the hard workingman are all declining. Capital cannot keep up its wages to the workingman under these conditions, and, in consequence, strikes, strikes, all over the land, and worse to come if the Treasury is to be allowed to keep on in the locking-up process. With our population increasing with unexampled rapidity, with peace in all our borders, why should this be?" The circular goes on to show from statistics that there are now locked up in the Treasury upwards of two hundred millions of currency, once in active use, and that the industries of the country are suffering in consequence. The remedy suggested is the re-enactment of the law authorizing the Secretary of the Treasury to purchase United States bonds with the surplus in his possession, thus reducing the government indebtedness at the same time that the withdrawn currency is restored to circulation. Business men are solicited to use their influence to have this measure adopted at the earliest possible moment. As to any reduction of the tariff, this is not deemed advisable while the public debt maintains its present magnitude. The circular states that the burdens imposed upon trade and commerce in the old country and the deplorable condition of the industrial population is to be attributed to the immense national debts of the several countries of Europe, and an urgent appeal is made for the payment of our debt before any action is taken to reduce the government revenue. Any surplus that may be accumulated cannot be put to better use than in the reduction of the public debt. So long as the money is locked up it is doing no good whatever; when once in circulation it passes from hand to hand, paying debts, establishing new enterprises and contributing to its full capacity in furthering the prosperity of the country. At the present time, when business in general is extremely dull, such an appeal as is made in this circular can be appreciated in its full force by business men.



[From our Special Correspondent.]

BOSTON, May 15.

Trade this month is dull; that can hardly be called a piece of news, for it has been said every month for this year. Still, as Mr. Palmer said the other day, nothing is wanting now to make trade as good as we can expect except better weather. The continued poor weather has prevented the spring from having as brisk a trade as was expected. In a few instances more cheerful answers are given, but they are very few.

"Trade will not be what it used to be," said one gentleman; "there are a number of reasons for this. I think that one reason is the agitation over the tariff, which, by its depressing influence in general, has a secondary effect upon the jewelry business, which is one of the first to feel any such depression, as luxuries are the first things upon which a man practices economy. The decline in the value of securities and the recent strikes both have their influence."

Another thing that works against the business is the increasing number of families that spend not only the summer, but the greater

part of the year out of town. They go South for the winter, do not come back until May, and immediately rush off to the mountains or the shore, not to return until late in October, when they begin preparations to repeat the last year's doings. This is why the New England trade, especially in the finer grades of goods, is growing less and less every year.

Much has been written in THE CIRCULAR regarding the introduction into dry goods stores of many lines of goods that are ordinarily handled by jewelers. Boston has been no exception to this, and this year one or two such stores have added fine pottery and paintings. The public seems to have the idea that because a dry goods house is selling pottery, that it is sold for much less than any jewelry store can sell the same, but a number of cases have been noted lately in which pottery has been sold at a dry goods store, which the purchaser thought a great bargain, but which, upon inquiry, were found to have cost 20 per cent. more than any jewelry store would ask for the same article. It is time that the public learned that the name of a house that sells anything from carpet tacks to handkerchiefs, and fills the Sunday papers with half-page ads., is not a sure guarantee of cheapness.

The first dinner of the Jewelry Club was a success and a decided one. It was held at Young's Hotel, May 28, preceded by a business meeting at which three new members, Royal Robbins, Nelson H. Brown and Thomas Long were elected, and also officers as follows: Charles Harwood, President; N. M. Smith, Vice-President; Irving Smith, Secretary and Treasurer; Chas. Harwood, D. C. Percival and A. Paul, Directors. In the absence of the President-elect, the Vice-President presided at the table. Those present were M. N. Smith, A. T. Sylvester, D. C. Percival, Andrew Paul, Irving Smith, M. F. Quimby, A. E. Whitney, Dean Southworth, Alvin T. Morrill, O. A. Drinkwater, G. A. Carpenter, B. L. Bogle, H. W. Patterson, Willard Harwood, C. F. Morrill, William Paul, J. P. Blake, W. H. N. Pratt, E. A. Whitney and Geo. H. Pinkham, Jr. The next dinner will probably be held at Point Shirley in June.

The Bay State Watch Company at their annual meeting declared a dividend of 7 per cent., and voted to increase their capital stock from \$60,000 to \$75,000. C. F. Morrill was elected President, D. C. Percival, Treasurer, and the same and Dean Southworth, A. T. Morrill and Henry F. Veith, Directors, and Irving Smith, Clerk. The business done by the company has been very prosperous during the year, and a large surplus remains in the company's treasury after the payment of the dividend.

Over a month ago a movement was started among the jobbers to begin closing at one o'clock on Saturday and five during the rest of the week upon the first of May, instead of waiting for the first of June, as has been the custom of late years. An agreement to do this was circulated and obtained the signatures of all the jobbers but one or two. This prevented the agreement from being carried out, but it is expected that all will begin closing early on the first of June.

The following circular has been sent to each stockholder and employee of the A. W. W. Co., and explains itself:

Dear Sir—Desiring to recognize in some appropriate manner the successful efforts of Mr. Royal E. Robbins, Treasurer of the A. W. W. Co., to whom, more than to any other, is due the credit of developing and maintaining the watch industry in America, it is proposed to raise by subscription a sum of money sufficient to defray the expense of a full-length portrait of Mr. Robbins, to be presented to the City of Waltham, not only as a tribute to his business capacity but also as a testimonial of approbation for the liberal policy which has resulted in the marked growth and prosperity of the city. The A. W. W. Co. Formen's Association has subscribed one hundred dollars (\$100). Subscriptions may be sent to J. L. Keyser, *Chairman of Committee*, W. R. Wills, *Secretary*, Martin Thomas, *Treasurer*.

Palmer, Bachelder & Co. show several novelties in silver goods, among them some link bracelets of unique design and a large variety

of table ware, especially carving sets. Two or three more water colors, by Henry Bacon, have been added to their list of pictures.

The store occupied by Mr. N. G. Wood has been secured by Jordan, Marsh & Co., who will occupy it at the expiration of the present lease, which will be in a short time. He has, however, secured McDonald's candy store, just across Washington street from the present location.

President Francis A. Walker presided at this month's meeting of the Society of Arts in the Institute of Technology. Mr. Geo. F. Kunz, of Tiffany & Co., N. Y., was introduced and read a most valuable paper on "Precious Stones in the Last Decade." In beginning his remarks, Mr. Kunz spoke of the effect of fashion in precious stones. Cameos, he said, bring but very poor prices now. Topaz is expected to become popular again. The importations of amber have increased remarkably in the last few years. Moonstones were brought to light in the search for cats'-eyes. The opal in the last few years has been ten times as much used as in the previous ten years, but purchasers in Mexico do not always get the bargains they imagine they do. The present unequalled popularity of pearls has stimulated search for them in all directions. The fresh water pearls from Kentucky, Tennessee and Texas are unrivaled in their fine color. The diamond mines and mining of Brazil and Africa were next taken up and illustrated by use of the stereopticon. A diamond trust to control the prices and output is one of the probabilities of the near future. During the evening almost every variety of precious stone and ornamental mineral was taken up, and many interesting facts related in regard to artificial production of rubies, diamonds and other stones. In conclusion, a number of lantern slides were exhibited, showing the diamond cutting establishments of Amsterdam and various other places, with photographs of famous armlets, necklaces, etc.

LEON.



[From our Special Correspondent.]

ATTLEBORO, May 19, 1888.

For nearly half a century the Attleboros have been noted for their jewelry. All kinds of business seems disposed to concentrate, and the starting of one kind of industry in a certain place is generally the signal for another of the same kind to follow. But if in the past the name Attleboro has almost been defined as "jewelry," it bids fair, unless a change comes soon, to mean "no jewelry." The dull season which struck this town like a northwest blizzard over three weeks ago, has only just begun to let up a little. The early spring trade was very good, but the wind which brought it suddenly died out and the sails of our manufacturers have been idly flapping ever since. But our people are made of good stock and their grit is proof against any kind of attack. One fact in relation to our business is worthy of notice, and that is, that not for a long time has there been a failure among the firms located here where the concern was of any prominence in business circles. I hardly know how to account for this, as it is hardly to be supposed that our business men are any greater financiers than the men of other cities. But we can only hope that this record will remain unbroken for a long time.

Those firms doing cheap work expect to have their hands full of orders very soon after the two great national conventions, and probably they will not be disappointed. The expected work will be in manufacturing campaign badges. A great many were made four years ago, and in all probability many more will be wanted this year.

ATTLEBORO.

Here the shops are running with but few exceptions 8 hours a day

the salesmen, as a rule, are not doing much on the road, but within a few days there have been indications of a larger demand.

The strike which occurred at Bates & Bacon's watch case factory a few weeks ago, turned out as such things generally do. No attempt was made by the proprietors to have the men return, and as far as was necessary their places were filled with new men. Within a short time some of these men made application to be taken back, and in one or two cases this was done by their depositing a bond for quite a sum of money. This was the first case of the kind which ever took place in this town, and the outcome must be very discouraging to any one disposed to follow their example.

Mr. Frank Bates, son of Mr. J. M. Bates, and Mr. J. G. Hutchinson, have recently started in the business of manufacturing buttons.

W. S. Gould & Co. have recently moved a portion of their machinery into rooms below their office.

Mr. Hubert M. Blandin, who has been in the employ of W. H. Wilmarth & Co. for some time as tool maker, died of pneumonia in this village the 10th inst. His funeral was attended by a large number of his former shop mates.

Mr. D. E. Makepeace will soon open a gold plating establishment in this village.

NORTH ATTLEBORO.

North Attleboro jewelers are making preparations for a season of activity which the hopeful ones see a few weeks ahead. In the meantime the shops are about all on short hours. This town, which was incorporated from the town of Attleboro last summer, propose to observe Memorial Day this summer by themselves. To this end a meeting of old soldiers to the number of about 40, was recently held to lay plans for the exercises. These veterans are nearly all jewelers, and when they start out to accomplish anything it is generally done in a worthy manner.

H. Hirsch & Co., of this place, have dissolved, and Mr. Louis Stern has retired from the business.

Draper & Franklin are having quite a large addition built to their shop. This has been done to accommodate the increasing wants of T. G. Frothingham & Co.

Mr. Josiah D. Richards, a prominent citizen of this place, and a man who has made the greater part of a large fortune in the jewelry business, has received the appointment of postmaster for this town, and the senate has confirmed it.

MENDON.



The following list of patents relating to the jewelry interests, granted by the U. S. Patent Office during the past month, is specially reported to THE JEWELERS' CIRCULAR by FRANKLIN H. HOUGH, Solicitor of American and Foreign Patents, 925 F Street, N. W., rear U. S. Patent Office, Washington, D. C. Copies of patents furnished for 25 cents each.

Issue of May 1, 1888.

18,282-3—Design for Clock Dial. Otto Bartel, New York, N. Y.
381,936—Device for Holding Watches. Edward Josh Lezard, London, England, Assignor of one-half to A. S. Lascelles & Co., New York, N. Y.

381,992—Watchman's Time Detector. Geo. B. Fessenden, Boston, Mass.

381,993—Watchman's Time Detector. Geo. B. Fessenden, Boston, Mass.

382,080—Musical Box. Edmond Fornachon, La Mothe, near Yverdon, Switzerland. Patented in Belgium, 73,119; in France, 176,207; in England, 6,962; and in Germany, 41,807.

382,190—Watch Case. Robert J. Quigley, Toronto, Ontario, Canada.

Issue of May 8, 1888.

18,299—Design for Clock Dial. Archibald Bannatyne, Waterbury, Conn., Assignor to the Waterbury Clock Co., same place.

15,425-6-7—Trade Marks. Watches. The Elgin National Watch Co., Chicago, Ill., used since Dec. 31, 1871, the words "Old Father Time," "Father Time" and "Old Time."

15,432-3—Trade Marks. Metallic Table Ware, both Hollow and Flat. The Holmes & Edwards Silver Co., West Stratford, Conn. "A Monogram of the letters 'H. E.," and "The Representation of a Maltese Cross."

15,452—Trade Marks. Watches. Elgin National Watch Co. "The Conventional Representation of 'Old Time.'"

382,292—Music Box. Louis Campiche, St. Croix, Switzerland, Assignor to Mermod Freres, same place.

382,485—Sleeve Button. Otto T. Mook and Willard L. Headly, Philadelphia, Pa., said Mook Assignor to said Headly.

382,517—Die for Making Watch Cases or other Articles. Frederic Ecaubert, Brooklyn, N. Y.

382,561—Metalic Thermometer. Thos. Wm. Shepherd, Peabody, Mass.

382,627—Watch Chain Attachment. Henry M. Stroud, Chase, Kans.

Issue of May 15, 1888.

18,306—Design for Clock Dial. Archibald Bannatyne, Waterbury, Conn., Assignor to The Waterbury Clock Co., same place.

18,307—Design for Clock Dial. Archibald Bannatyne, Waterbury, Conn., Assignor to The Waterbury Clock Co., same place.

382,758—Initial Finger Ring. William R. Dutemple, Providence, R. I.

382,826—Alloy. Heinrich Osterman, and Axel Prip, Geneva, Switzerland.

382,826—Alloy. Herman Osterman and Axel Prip, Geneva, Switzerland.

382,848—Nose Guard for Eye-Glasses, Walter S. Wells, New York, N. Y.

382,879—Music Box. Eugene Felix Jaccard, St. Croix, Switzerland. Patented in Germany.

382,953—Open Ring. Joseph Daniels, Cleveland, O.

382,987—Eye-Glasses. Amelia Kahn, St. Joseph, Mo.

383,052—Detachable Button or Stud. Heinrich F. Hambruch, Hamburg, Germany, Assignor to Aug. F. Richter, same place.

383,059—Stop Watch. Edmond Kuhn, Brooklyn. Assignor to the Manhattan Watch Co., New York, N. Y.

Old Iroquois Indian Jewelry.

GEORGE F. KUNZ.

THE following interesting objects which have come into my possession, are worthy of a passing notice. They were all found in an Indian grave, in Cayuga county, principally at Scipioville, N. Y., and were evidently buried about the time of the French and Indian war, when the Jesuits were on very good terms with the Iroquois Indians and traded with them extensively while making proselytes at the same time. The five rings here illustrated are all of brass or copper, and with them were found four rude copper pendants which still show traces of cord and hair, a copper fish-hook and eight large Venetian beads, the largest nearly one inch in diameter and the smallest about one-half inch in diameter. All are banded deep blue or red and white.

The rings are all covered more or less with platina. The device



No. 1.



†

No. 2.



†

No. 3.



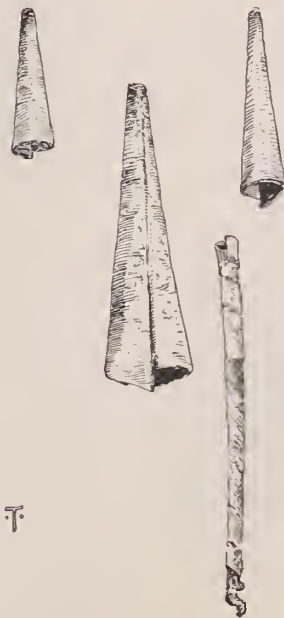
†

No. 4.



†

No. 5.



†

No. 7.



†

No. 6.

OLD IROQUOIS INDIAN JEWELRY.

on No. 1 consists of a cross and a rude inscription "I. H. S.," and still shows traces of gilding.

No. 2 represents the crucifixion with two female figures evidently the two Mary's weeping at the foot of the cross.

No. 3 evidently contained some stone which has dropped out, leaving the mounting and traces of what was probably a filling of some sort.

No. 4 has a rude heart on the upper part of the ring and beaded ornamentation at the sides.

No. 5 apparently has some mystic symbol or seal characterized upon it; the shank is entirely plain.

No. 6 is a silver coin, an early French groat, having on one side a rude Greek cross. It has been perforated and was doubtless worn as a pendant.

No. 7 are thin copper plates which served as the ends of a necklace, the long central piece consisting of a bit of thong wound with copper.

Practical Hints on Optics for Skilled Opticians.

[BY C. A. BUCKLIN, A. M., M. D., NEW YORK.]



WE ARE obliged to interrupt our series of articles on muscular defects and the publication of some letters of enquiry pertinent to this subject, owing to the fact that the monthly article on this subject containing letters, after being duly mailed to THE CIRCULAR in the usual way, failed to reach the office. I am, therefore, at the last hour called upon to furnish an additional monthly article. The one subject of which the optical mind never grows weary is therefore selected.

ASTIGMATISM.

When we review the history of ophthalmology during the past quarter of a century, we must admit that the advancement made in this single subject as a result of anatomical study and physical investigation is truly marvelous. Thirty years ago the subject was just dawning on the minds of the greatest investigators. At present the subject is more practically if not theoretically understood in every rural city, and the knowledge gained by centuries of investigation is being practically made use of in relieving thousands of persons from severe suffering resulting from astigmatism. Thirty years ago this class of cases were supposed to be suffering from a partial but incurable blindness. To-day their obscure vision and suffering is relieved like magic by the general introduction of cylindrical glasses, and the general education of a large class of men who know how to use them.

The cause of all forms of astigmatism is primarily the failure of the cornea to possess a perfectly spherical surface.

Astigmatism is classified for the purposes of teaching the subject clearly into the following forms: *Simple, compound, mixed and irregular astigmatism.*

- Simple hyperopic astigmatism.
- Simple myopic astigmatism.
- Compound Hyperopic astigmatism.
- Compound myopic astigmatism.
- Mixed astigmatism.
- Irregular astigmatism.

In all simple forms of astigmatism, one curve of the cornea is normal, and the curve at right angles to the normal curve is either too flat or too sharp.

In ninety per cent. of all the cases of hyperopic astigmatism, the horizontal curve of the cornea or some curve near the horizontal is too flat, the curve at right angles to the flat curve being normal.

In ninety per cent. of all cases of myopic astigmatism, the vertical

curve of the cornea is too sharp, the curve at right angles to the sharp curve being normal.

Before leaving the two forms of simple astigmatism, let us consider them in all their details.

If you direct the attention of an individual having simple astigmatism to the radiating lines of an astigmatic face, he will at once report that certain lines which are exactly alike, appear to him to be of unequal darkness.

If the individual have hyperopic astigmatism, ninety times out of a hundred he will say that the horizontal line, or some line near the horizontal, appears the darkest. This defect is always corrected by a convex cylindrical lens with its axis set at right angles to the darkest line. If the horizontal lines are the darkest, the axes of the cylinder correcting the defect will stand vertical.

If when testing the right eye, lines to the right of the vertical above the horizontal line appear the darkest, and with the left eye, lines to the left of the vertical but above the horizontal appear the darkest, then the axes of the cylindrical lenses will slant towards each other above. If, on the other hand, the dark line seen on the face with the right eye be above the horizontal and to the left of the vertical, and the blackest line seen with the left eye be above the horizontal but to the right of the vertical, then the axes of the cylindrical lenses will slant away from each other above.

In each case the black line seen represents the faulty curve of the cornea, and the axis of every cylindrical lens is always set at right angles to the faulty curve of the cornea.

In myopic astigmatism the vertical line, or some line near the vertical line, appears the darkest. When the vertical line is the darkest, the axes of the concave cylindrical lenses will be horizontal.

If with the right eye some line to the right of the vertical appears the darkest, and with the left eye some line to the left of the vertical appears the darkest, then the axes of the necessary concave cylindrical will slant upwards towards each other.

If with the right eye the darkest line appears to the left of the vertical and with the left eye, then the axes of the concave cylinder necessary to make the lines all look equally dark will slant downward toward each other.

As in the previous case of hyperopic astigmatism, the darkest line represents the position of the faulty cornea curve, and the axis of the cylindrical lens is always required at right angles to this line for each eye.

Compound-hyperopic astigmatism is formed commonly by the union of simple hyperopia to hyperopic astigmatism. It may be formed by the cornea having faulty curves in both meridians, both curves being too flat, but one curve being less flat than the other.

Compound-myopic astigmatism is formed commonly by the union of simple myopia with myopic astigmatism, or it may be formed by both corneal curves being too sharp, one curve being sharper than the other. In compound astigmatism the rules given for the determination of the axis in simple astigmatism do not hold good until the compound astigmatism is reduced to simple astigmatism by the use of a concave or convex spherical lens, which represents the strength of the hyperopia, or myopia in the case.

Where there are two faulty corneal curves, both hyperopic or both myopic, the giving of a concave or convex lens which is equal in strength to the weaker corneal curve reduces the compound astigmatism to simple astigmatism, making the above given rules for roughly determining the axis given in simple astigmatism good.

Mixed astigmatism is formed in three ways: simple myopia is joined to hyperopic astigmatism, or simple hyperopia is joined to myopic astigmatism, or one corneal curve is sharper than normal, usually the vertical, and the other is too flat.

These cases require experimental determination of the defect in the different meridians by selecting the cylinder which gives the best result, then crossing it with a cylinder of the opposite value at right angles; thus having measured one meridian you do not disturb it while you measure the reverse meridian with another cylinder.

For example, Mr. B. refuses both concave and convex lenses, he accepts concave cylinder No. 26, ax. 180° , which greatly improves distant vision, but does not make it satisfactory. This cylinder is crossed with convex 40, cylinder ax. 90° . The resulting formula is:

Right Eye— $\frac{1}{2}$ c. ax. 180° \ominus $+\frac{1}{4}$ c. ax. 90° .

Left Eye— $\frac{1}{2}$ c. ax. 180° \ominus $+\frac{1}{4}$ c. ax. 90° .

Vision= $\frac{2}{3}$.

Vision= $\frac{2}{3}$.

Such lenses are only ordered by the young and foolish. We change this formula to a sphere and cylinder which will answer the same purpose, thus $+\frac{3}{4}$ s. \ominus $-\frac{1}{3}$ c. ax. 180° .

$+\frac{1}{6}$ s. \ominus $-\frac{1}{3}$ c. ax. 180° .

We now have a lens which produces the same effect; it is easily ground, and can be adjusted perfectly if any error is made by the grinder in the position of the axis.

By request of several who really desire *thorough* instruction in optics, I contemplate forming a separate class for June 15. I only wish to instruct those who desire a thorough knowledge of the subject, as the formation of the class depends on the number applying. Applicants will please commence as early as possible.



[THE CIRCULAR is not responsible for the opinions or statements of contributors, but is willing to accord space to all who desire to write on subjects of interest to the jewelry trade. All communications must be accompanied by a responsible name as a guarantee of good faith. No attention will be paid to anonymous letters. Correspondence solicited.]

DEATH OF REV. C. W. KING.

To the Editor of the Jewelers' Circular:

In the death at Cambridge, England, on March 29, of the Rev. C. W. King, Senior Fellow of Trinity College, and the greatest of all authorities on gems, antique and gnostic, the learned world has suffered an irreparable loss. His life was passed in the scholarly seclusion of the University, or in foreign travel and the study of the special branch of knowledge to which he was mainly devoted, and as the fruit of his profound investigations we have the following works: "Antique Gems," 1860; "The Natural History of Precious Stones," 1865; "Hand Book of Engraved Gems," 1866; "The Natural History of Gems or Decorative Stones," 1867; "The Natural History of Precious Stones and of Precious Metals," 1867; "Gnostics and their Remains," 1864; "Antique Gems and Rings," 1872; "Early Christian Numismatics and other Antiquarian Tracts," 1873; besides a large number of special articles such "Stella's Decem Puellae;" "On the Signet of Eros;" "On a Silver Statuette of Fortuna Nemesis;" "On a Cameo Representing Jupiter Dodowaeus;" "On a Mummy's Treasures Recently Discovered in the Delta;" "On Two Remarkable Engraved Gems of Early Christian Work;" "On Two Unpublished Christian Gem-Types;" "On an Antique Paste Cameo Found at Stanwix, near Carlisle;" and "Triumph of Constantine." But Mr. King's scholarship, phenomenal as it was in this particular branch of learning, was not limited to it by any means. He was a most accomplished classical scholar, and in conjunction with Rev. H. A. J. Munro, he brought out the famous edition of "Horace," illustrated with examples of antique gems. He was a valued member of the Royal Archaeological Institute, and on timepieces, from the deysdra down to the latest improved watch, he was undoubted authority. The few biographical data that follow were embodied in a letter written by him a few months before his death:

"In reply to yours of September 26th, I am sorry to say I have neither *carte de visite* nor biography to send you. All I can do is to

communicate the few dates of my uneventful life as follows: Born at Newport, Monmouthshire, 1818, Sept. 4. Educated at private schools. Entered Cambridge University, Oct., 1836. Took B. A. degree, Jan., 1840. Elected Fellow of Trinity College, Oct., 1842. Resided at Rome and Florence from 1845 to 1850. Elected Senior Fellow of the College, August, 1857. Published my first work, 'Antique Gems,' Dec., 1860. The dates of the succeeding works are already known to you."

The collection of antique gems, numbering 331 pieces, which was formed by Mr. King and represents the keystone of his vast knowledge, was sent to the United States for sale in 1881, on account of the owner's failing sight. The growing interest in archaeological matters in the United States induced him to send it here, to be sold intact. Through the friendly mediation of Mr. Feuardent, in October, 1881, it was purchased and presented to the Metropolitan Museum of Art by Mr. John Taylor Johnston, then President of the institution, where it has since reposed. The collection is called the 'Johnston' collection, after the giver, and not after him who gave the work of a lifetime and a knowledge unique of its kind to the building up of this monument, only to have it bear another's name. It was surely never Mr. King's intention that this should be the case since he sold it for \$2,000, less than he could have obtained for it on the condition that it should remain intact, and although he was one of the most modest of men he never for a moment doubted that his name would be connected with it. The gift would do greater credit to the giver and be of greater credit to the Museum if Dr. King's name were attached.

GEORGE F. KUNZ.

BACK NUMBERS FOR SALE.

To the Editor of the Jewelers' Circular:

I have 77 copies of THE CIRCULAR from 1878 to 1885 inclusive, that I would like to dispose of, all in first-class order.

Yours truly,

A. LOWER.

Griffin, Ga., May 12, 1888.

To the Editor of the Jewelers' Circular:

Enclosed please find my check for ten dollars for this year's subscription of your journal and back numbers of the last four years. Please send good copies, I wish to have them bound.

Very truly,

H. T. WOLF.

Philadelphia, Pa., May 24, 1888.



[From our Special Correspondent.]

KIMBERLEY, March 10, 1888.

It is many years since Kimberley was so lively. It is on the main route to the Transvaal gold fields, which are a genuine fact and likely to rival California in its golden days. Arrivals and departures are continual, and there is a feverish bustle and excitement everywhere. Scarcely a single bed is obtainable, and rents and rates for accommodation are exceptionally high. Kimberley is reached by rail from Capetown or Port Elizabeth. The remainder of the journey to Johannesburg, the principal gold mining center, is accomplished by mail carts in about three days. The arrivals recently are from all quarters of the globe. The majority are people who have been on gold fields elsewhere. The cost of living on the gold fields is very high, crime is prevalent, and existence is beset with many dangers and discomforts. It is likely, however, that as things get

more settled the latter features will be minimized. As official figures are often preferred, it may be stated the gold registered at the Capetown Custom House last month was 24,460 ounces, valued at £86,320. This is merely a tithe of the production when all the machinery arrives.

The export of diamonds last month (March) comprised 330,167 karats, valued at £358,344, the average per karat being 21s. 8¼d. The latter is an exceptionally low average.

It is quite certain now that the output of diamonds can be regulated by the caprice of the directors of the amalgamated companies. The whole essence of diamond mining is a monopoly, and we have long ago been shown by engineers of renown that by underground working Kimberley mine could be made to yield at the rate of 20,000 karats per day, and the De Beer's mine be made to yield another 20,000 karats or double. These two mines, which have just been amalgamated, are now valued at £4,500,000. The average yield is one karat per load of ground.

There can be no doubt that the diamond mines form one of the wonders of the world. Depth does not appear to diminish the average yield, and if the reports of experts are reliable, their extent is limitless. For years and years to come the proprietors may go on winning the precious gems by dint of hard labor and all the perfect machinery that science can invent. The outside public, however—those who obtain their living at the fields by trade or handicraft, but who have no direct interest as shareholders or workers of the mines—may at any time have to face the contingency of works being reduced or stopped altogether, according as it may suit the purpose of the proprietors to limit or cease production in order to influence prices in the great markets of Europe and America. Generally, monopolies benefit the few at the expense of the many.

It is a novel thing in the annals of companies to find the Chairman offered £10,000 and the Directors £5,000 as an acknowledgement of services rendered, but more remarkable still is the circumstance of such a magnificent proffer being declined. Yet this occurred last week at a meeting of the shareholders of the De Beer's Mining Company, Limited, which, as before stated, has just amalgamated with the Kimberley mine.

Only recently has it been decided to establish a Stock Exchange in Kimberley. It is surprising that an institution of this kind has not long since been founded in a place in which is planted the main-spring of speculation. The number of men (and boys) engaged in the broking business in the share market here is some sort of guarantee that it is a very easy sort of calling, and profitable, withal. It also indicates that the taste for stock dabbling is a very general one throughout the community. Some years ago it used to be said that all the qualification which a law agent required were a one-roomed iron shanty for an office, a copy of the Rules of Court and an unlimited supply of the article vulgarly known as cheek. The race of shoddy lawyers is now all but extinct, but the Brummagem broker has sprung up in his place. With him the iron shanty need be nothing more than an unknown quantity, the "Rules of Court" give place to an imposing bill book with a soiled blank cheque sticking out of it, and the "cheek" has to be multiplied fifty fold. These poor fellows talk with a Croesus-like air and the confidence of all the Rothschilds about speculations involving the handling of thousands or hundreds of thousands. Some of them are more intimately acquainted with the mysteries of "nap" than the forms of a broker's note. They are afflicted with an abiding thirst, and their consumption of cigars gives them a strong claim on the affections of the Treasurer-General. They somehow manage to do a little business here and there, for their plausibility and self-assurance carry them through with a greater or less degree of success. They have for clients (or victims) a class of men and women—more's the pity—who astute and sharp enough in their ordinary business, appear to be perfectly helpless when cornered and buttonholed by a glib-tongued gentleman having so deep a respect for the truth that he keeps it safely locked up—away from all contaminating influences.

It has always seemed strange that while there are so many brokers of good repute, the sharpers and hawks of the market frequently continue to secure the confidence of simple folks on the strength of extravagant promises and bare-faced representations.

It is, of course, impossible almost to write about this place without inflicting some "shop" upon your readers. It is utterly out of the question to refer to Kimberley without talking of its share market. What Mecca is to the true Mussulman so is the "market" to the average Kimberleyite. And naturally, for by his own industry he has created a world-renowned center, where but a couple of decades ago was a howling wilderness. Think of it, and you will agree that the plaudits of the world are due to the men who, under Providence, transformed a barren veldt into a mart which flashes its eagerly watched news to the lines of commerce of the old and new worlds. Besides, it was the diamond fields that saved South Africa from an ignominious and perhaps permanent bankruptcy. It was the wizard with his pick and shovel which made South Africa a familiar word, where but a few years since it was synonymous with *terra incognita*. If we boast a little we have ample reason.

There are many anomalies of social life. The ladies who flaunt in satins, etc., whose ample bosoms glitter with the flash of diamonds, etc., have, in most cases, known what it is to scour the steps and roll up their brawny arms to do a day's washing in the back kitchen. That was in the "dear old country," of course, but here they go in for silks instead of soapsuds, for their husbands are diamond merchants and great speculators now, and not small shopkeepers in back streets or itinerant vendors on the highway. The offspring of these newly rich are, however, being educated as though born in the purple, and perhaps next generation will prove something higher in culture than the last.

There are many Indians and a few Chinese here. No one would suppose, however, that the dusky, straight-haired, slightly-built Hindoo women, with bangles and nose rings, bare arms and flowing drapery of the commonest calico, are worth so much money as some of them are. Two of these Coolies were before the magistrate to-day for assault. The magistrate fixed a sum for bail which any one would naturally have thought was an impossibility. When the sum was named, a Coolie woman, a fruit hawker, offered bail, and most conclusively proved that she was possessed of property of the value of £800.

An awe-inspiring sight on "the market" is the dense mass of people who come to quench their thirst at the adjacent bars. Of all sorts and conditions, one rubs shoulders with shady characters as with celebrities and millionaires. When taking a "squash" one may see such men as the Diamond King (Mr. Rhodes) affably quaffing a little of the "barley bree" with Sir Thos. Uppington, the Cape Attorney General, while around the notorious characters of the fields congregate. The groggery here is a truly republican place. The philosopher there beholds to his profound satisfaction, no doubt, an unforced realization of the theory that one man is as good as another as long as he behaves himself and pays for his "gargle."

This is an age of big diamonds evidently. Sensation was caused last week by the announcement that the largest diamond in the world had been unearthed at De Beer's mine and had already begun to have a history. It is as large as a decent-sized potato, of beautiful light-yellow color and perfect shape, and weighs 428½ karats. But for the color it would be almost priceless; as it is, in the rough, it is valued at £3,000. The company purpose sending it to Amsterdam to cut, and to keep it for exhibition. Yet this enormous diamond had been found by a native who had secreted it about his person, and had managed to evade the searching officials who carefully search every native servant as he leaves the mine. The native, however, was imprudent outside, and actually displayed his stolen gem at a drinking bar in the camp. He has, of course, been arrested, while the precious gem will materially swell the returns of diamonds produced by the company

for the month of March. Three days ago, however, this find was completely put in the shade by the finding of a still larger stone in the same mine. This latest one weighs 436 karats, and is of a dark-yellow color. Its shape is perfect and it now takes precedent as being the largest diamond in the world. Its value should be very considerable. It would be interesting to know if the two stones could not be cut to the same size, and thus become a pair of the largest brilliants the world has ever known.

Dutoitspan mine has been beating the record in big falls of reef. There were several last week, probably caused by some heavy rains a few days previously. As well as affecting prices of stock, these falls come very hard on the workingman, for the procession of unemployed invariably becomes longer after a heavy subsidence.

The astute diamond thieves have been reviving an old trick and nearly succeeded. They came out as representatives of a firm dealing in improved safes and brought some of the latter with them—just as samples, don't you know. Of course, they had all the necessary duplicate keys, etc. They sold one of the safes to a large company, which on several occasions had it nearly full of gems. The dealers, no doubt, watched carefully, but they missed the main chance. They managed to get access to it and walked off with the contents, which happened to be worth only about £300. They have, of course, sought a new field of operations. Some years ago a similar trick was played and a well-known diamond company was nearly ruined, as it had been keeping back its gems for a rise in the market. To the present nothing has been heard of the manipulators who hurriedly left these scenes.

Liability for Partnership Notes.



HOW FAR one partner can bind his firm is a question of considerable interest to all persons engaged in business. The Supreme Court of this State recently decided a case having an important bearing on the matter, and is of such general interest that we give the points as we find them summarized in *The Iron Age*. The degree of responsibility attaching to one partner for the acts of another is very clearly set forth in this case.

The case referred to is that of the First National Bank of Scranton vs. Wolf. The defendant, Wolf, was engaged in business, and with his partner composed the firm of A. Wolf & Co. This partner indorsed very heavily for a certain lumber concern, and also gave promissory notes for large amounts purely for the accommodation of the payee. These indorsements were made, and the notes given were made, in the firm name of A. Wolf & Co., but the firm never realized any benefit from them, and the partner who signed or indorsed them testified that he personally never received any consideration for the note or for his indorsements. All these notes were given and these indorsements made in the firm name without the knowledge or consent of Wolf, the senior partner. He never heard of them until he was sued and was then for the first time informed by his partner that such notes had been given. The lumber concern had taken these notes and either negotiated them with individuals or procured them to be discounted at national banks. Many of them were deposited as collateral security for the payment of other notes made by the lumber firm, and discounted, the bank being informed in some cases that the collateral notes were in payment of lumber bills. The lumber firm failed, and suits were then brought by the banks and the other holders of the notes, against the indorsers and the accommodation makers, and the suit in question was one of the number. It was decided, as a matter of law, that the banks having taken the note before maturity for a valid consideration, and without any knowledge or suspicion that the note was accommodation paper, and still less that the note was given by one partner without the knowledge and consent of the other mem-

ber of the firm, was entitled to recover against all the partners, including Wolf.

Besides the interesting decision as to the powers of partners to bind each other, this case also shows in a marked degree the tendency of courts of law to place accommodation paper on the same basis as any other negotiable instrument. An impression prevails among business men that accommodation paper is worthless, and that the maker cannot be held upon it. Even among the lawyers, as was recently remarked by a judge of one of the New York courts, there seems to be a vague impression that such paper is not good, provided the one who buys it knows that it is accommodation. This is sometimes true; there are some cases where, under these circumstances, the maker could not be held, but they are cases where the indorser takes the note without paying value for it. A man is perfectly justified in advancing money or merchandise or giving credit on the faith of such paper, even though he knows it is accommodation. One who gives accommodation notes is virtually loaning so much money. He gives it for the purpose of enabling some one else to raise so much money on the maker's credit, and there is no reason why he should not be held if his accommodated friend does not take the note up at maturity.

It is quite frequent in articles of co-partnership to insert a provision that no partner shall make or negotiate any promissory note without the knowledge and consent of his partners, and this provision is, of course, valid as between partners. A violation of such a clause would constitute valid grounds for a dissolution should the other partner desire, and in some cases would render the partner in fault liable to an action by his fellow-partners for damages for breach of contract. But this provision or restriction obviously has no outside force and cannot be binding upon any persons except the members of the firm or perhaps those who know of this limitation of a single partner's authority. If the note is made by one partner and negotiated, the firm is liable, as they would be for any partnership debt. This liability, also, it must be remembered, extends not merely to the partnership property, but should that prove insufficient to meet the note, the individual and private property of the other partners can be taken to satisfy the debt.

Watch Mainspring.



EVERY LITTLE is generally said in the horological press on the subject of mainspringing; while some writers appear to have "isochronism" on the brain, others treat *ad nauseam* of the pallet draw and locking, while mainspringing is but occasionally mentioned and treated with a step-parent's affection. We recently read in a horological publication where the writer advised to substitute the hook on the barrel for one on the spring; not to make it of steel, but of the softest and best of iron, for instance, an American clock pendulum rod or a horseshoe nail. To use iron, because it is more easily and more firmly riveted and easier to cut off and finished.

These are apparently weighty reasons, although not many practical watchmakers would agree with the writer in substituting a hook on the barrel for that on the spring in a watch with fusee and chain. The trial has occasionally been made, but the inevitable result was that the first time the chain breaks the barrel is bulged out on the side, caused by the recoil of the spring against the hook, and in all probability ruined beyond redemption. He next recommended that the workman should always shape the hook on the spring and polish its face before it is put in the barrel. This style of work may be possible to do, but it is certainly neither practical nor customary.

A practical method of fitting this kind of hook would be about as follows:

A piece of soft iron is held in a pin vise and filed to fit the hole in the barrel, round or square, whichever it may be, giving it as little

taper as possible; pass the wire so fitted into the hole in the barrel from the outside, in giving it the same slant as the hole, and make a scratch with a sharp point across it and on the inside of the barrel; withdraw the wire and turn it end for end in the vise, bringing the end faces of the jaws even with the scratch. You now place this vise, with the wire in it, in a perpendicular position in the bench vise; first shorten the wire and then proceed to fit it to the hole in the mainspring, which has been previously punched, countersunk and pointed, as already described, allowing the jaws of the pin vise to act as a gauge for the scratch made on the wire, remove the wire from the pin vise and grip it firmly in the left side of the bench vise, close up, but not so as to injure the part which is to form the hook.

Put the spring in its place and rivet up carefully and solidly; have the spring so countersunk as not to permit any of the rivet to project above the surface of the spring. Take it out of the vise and cut off, leaving just enough to form the hook. Try if the hook fits by putting it backward into the hole in the barrel from the outside, for it is possible to distort its shape in riveting, etc. Being satisfied, and not having the hook excessively long, wind it in and ship the hook.

You now take the barrel between the thumb and point of the middle finger and slap it on the bench, first on one side, then the other, till you see that the hook is well home to its place. Put the arbor and cover—presuming that the spring was oiled before winding it in. All that remains to be done now is to finish the hook outside the barrel, which is done by carefully filing it down till you come close to the gilded side or edge of the barrel; you then take a piece of thin writing paper and lay over it, and go on filing both paper and hook together till you touch, but not deface, the barrel. It is well now to grip the square of the arbor in a pin vise, and set the spring up to test the efficiency of the hook, and, if possible, to force it further through the barrel, in which case you repeat the filing through a fresh piece of paper. You now finish the job by passing a clean flat burnisher over it a few times, also through a piece of paper. I consider it quite impossible for a hook on the spring that is properly fitted to fail to hold securely.

It is easily seen that the hook on the spring is preferable to having it on the barrel, because box chronometers of all nations have it on the hook. We may readily conjecture that when we see the hook of a watch with fusee and chain altered from the spring to the barrel, that it was the work of one who was either too lazy or incompetent to do the job, but it is not to be accepted as evidence that the hook-on-the-barrel style is more reliable.

Necklaces as Ornaments.



BEAUTIFUL necklace of any of the many different kinds which one can see in the jewelers' stores, when around the necks of a handsome woman, must be said to improve her looks greatly. The advantages which the neck, both from its position and shape, possesses as a point for adornment, were early seen by the human race, and the necklace is one of the oldest of human ornaments. From the very first a broad distinction was drawn between the necklace which could be removed and the collar which could not, the first being the sign of the free, the second of the slave. Collars of metal were twisted and riveted upon the necks of captives or house-born slaves, and upon them the name of the owner or conqueror was rudely cut. This usage survives to-day in the dog collars which are placed upon household pets.

The necklace, however, could for many years only be worn by the freeman. In primitive states of society it was the badge of the warrior, and was often made of some distinctive spoil of the chase or of war. To this day one of the most valuable and coveted possessions

of the western Indian is the necklace of grizzly bears' claws, a proof that he has met and conquered the gray terror of the mountains. Among the Tartars of the times of Genghis Khan, the necklace was often made of human teeth, strung together upon wire. This particular form of ornament is found in South America in the graves of the Indians.

The earliest known form of necklace outside of such primitive types as shells and bits of colored stone comes from Egypt. They were of two kinds, ornamental and what may be called for the lack of a better word, superstitious. The former was composed of small stones, of which blue was apparently the favorite color, set in silver or gold, and joined together in a chain. The latter, the armlets, were made of figures of gods, from three to seven inches long. Three or four of these were hung in a chain of beads.

The sacred images were believed to ward off danger of infection, misfortune or bad luck. Sometimes the armlets had no gods in them, but were composed of bits of stone arranged in the forms of locked horns, fish, or crescents, emblematic of their supposed powers. The superstitious power of the necklace is widely spread to-day among people who are not very high in civilization. In South America there are found necklaces of a peculiarly marked seed which belongs to a plant growing only on the mountains, along the snow line. These seeds, when first gathered, are blue in color, and are strung on strings. They are highly valued not only for their beauty, but because of the great difficulty in obtaining them. In the old graves which are found now and then, strings of these seeds are often discovered, and they are supposed to bring the greatest possible luck, especially to children.

But one does not have to go to the peons of South America or the negroes of Africa with their gee-gee necklaces to find evidence of superstition. Thousands of people place necklaces of coral beads around the necks of babies with the belief that they will assist the children in teething, and there are many persons who wear necklaces all the time thinking that they bring luck. The southern negroes constantly wear their bead necklaces, looking upon them as genuine charms, and they are very particular about keeping them intact, holding that the charm is broken if even the relative positions of the beads should be altered when wear makes a new string necessary. The common practice among some religious sects of wearing a medallion around the neck hung to a chain or string is akin to this necklace idea, and, in fact, a variance of it.

Among men who have worn the necklace must be ranked the warriors of ancient times. The gold torques of the Celts, the massive gold necklaces of the Meder, Etruscans and Egyptians which formed the most valuable insignia of the warrior class, have come down to us through the pictures in the tombs and the actual specimens in the tombs themselves. Some of these were enormously costly. They were bestowed as rewards of valor and as marks of civil distinction. The latter survive to-day in the gold chains of office worn by the Mayors of cities in the old world.

All orders of knighthood had the necklaces or collars as a principal insignium, and this custom of decoration with the necklace dates back at least as far as the time of Joseph, for as a mark of his authority in Egypt, Pharaoh "put a gold chain about his neck." The women of antiquity rarely wore them, except as brides, when to mark the respect in which they were held, necklaces were placed upon them. The necklace, however, was a prominent adornment of the statues of the gods.

The ornaments of the necklace were so valued that when the Saxon dynasty was overthrown by the Normans, all persons below a certain rank were forbidden to wear them under heavy penalties. King Henry XIII. ordered, both in celebration for his wives and his revolt against Rome, that any one who had not £200 per year income could not wear a necklace. At that time, however, they became the common ornament of women, and in the Elizabethan dramatical plays are found many allusions to them. In England amber has always been one of the favorite materials for the necklace.

Even in the barrows of the Early Britains amber heads are found, and the specimens of necklaces from the reign of Charles I. have amber set in gold. The Puritans abolished them as they abolished everything they laid their hands on which savored of ornament, but the necklace was revived again under the "merry monarch" more extravagantly than before. It gradually came to consist of several chains hung around the neck, each reaching further down than the one before. To the largest was hung the whistle of gold or silver used as a call for servants. These necklaces were of all materials, gold, silver, amber, beads, jewels, or medallions. Some of them cost very large sums of money.



ELECTRO-PLATING UPON WOOD.—Electro-plating silver upon wood is now successfully performed, the process being adapted to handles of all kinds, including umbrellas, canes, carving knives, etc. The silver is thrown upon the wood by a process which, it is stated, has proved extremely difficult in practice. The deposit of silver, of course, follows all the peculiarities of the wood, and the ordinary handle is simply garnished in the most ineradicable silver.

THE BREAKAGE OF MAINSPRINGS.—A prolific cause of mainsprings breaking is the barrel arbor being too small, causing too close a strain on the small coils of the spring. The trouble of putting in a larger arbor is sometimes avoided by putting in a higher hook, which increases the effective diameter of the arbor, but a better plan of taking off the destructive pressure on the center of the mainspring is the insertion of a loose coil of spring between the arbor and mainspring. In a properly proportioned barrel and spring, one-third of the space in the barrel is occupied by the arbor and another third by the mainspring, leaving one-third for its development.

DEAD PALE LEMON ON GOLD.—A dead pale lemon color can be given to plain work when the alloy is right, by carrying out the following instructions: The work requires to be well polished in order to present a nice surface, after which process it is washed in hot soda water and dried; it is then annealed by placing over a clear fire upon a copper pan. The annealing oxidizes the surface of the work, and thereby renders it the more attackable by the acid employed in the subsequent process. When the work has cooled from the annealing it is suspended upon a wire, and then dipped into boiling dilute nitric acid, free from muriatic acid, when the articles will present a fine rich lemon color.

BARREL HOOK.—The usual form of hook in a brass pin undercut and is objectionable on account of its size and want of strength, and is liable to be forced out as the watch runs down, or to have its undercut hook flattened when winding the spring; in both repairing and new works we find nothing so good as a simple steel pin with a thread on it, made in one of the smallest holes in the screw plate, fitted to a hole drilled in the barrel at a considerable angle to the center, and, being screwed in tight and broken off from the outside, saves filing the gilt barrel, then nipped off inside and filed away to a thickness slightly in excess of that of the mainspring. All extra length only renders it liable to pressure from the coils of the spring when down, beside destroying the capacity of the barrel for holding a long mainspring.

MOTION WORK.—The motion work of watches is open to reform in several trifling matters. In English watches, even of the better makes, the minute wheel moves mostly on a brass pin, driven rather carelessly into the pillar plate, an execution altogether unworthy of the character of and general workmanship of these watches. The Swiss watches, on the contrary, down to their lowest qualities have invariably a screwed staff on which the minute pinion is adjusted. These staffs are not easy to make, inconvenient to take out and screw in again, and by the tapping of the hole in the plate they offer less reliability of a true pitch than a round hole drilled on the pitch circle. It should be thought that there is a way between these two which is easy of execution, and irreproachable as to solidity and diminished friction. A hole of the same size as that in the minute pinion is drilled through the pillar plate on the pitch circle; a good round and well polished pin of hard steel, rounded at both ends, is driven into this hole even with the inner surface of the plate, and projecting on the other side till it nearly touches the dial. The

minute pinion has a small projecting canon left beyond the riveting to hold the minute wheel at a little distance over the plate.

MOMENTUM.—Momentum overcomes some of the elastic force of the balance spring and friction. It is the force of a body in motion, and is equal to the weight of the body multiplied by its velocity. Velocity in a balance is represented by its circumference, a given point in which it travels a given distance in a given time. Weight is that contained in its rim. A balance may be said to have more or less momentum, in proportion as it retains force imparted to it by impulsion. If a watch has a balance with which it has been brought to time and this is changed for one of half its size, it requires to be four times as heavy, because its weight is then only half the distance from the center, and any given point in its circumference has only half the distance to travel. On the other hand, a balance twice the size would have one-fourth the weight. In the first case the balance would have twice as much momentum as the original one, because if we multiply the weight with the velocity, we have a product twice as great. In the latter case, a like operation would give a product half as great as in the original balance. It follows that the smaller and heavier a balance, the more momentum, and *vice versa*, the less momentum it has, always on the condition that the balance spring controls both equally.

TO WEAKEN A BALANCE SPRING.—I have, says a correspondent of a home paper, tried all methods recommended for reducing a balance spring. Acid, which is generally used for the purpose, I have tested thoroughly, and find this objection to it: You may make your acid as weak as possible (to have any effect on the spring), oil and boil out as much as you please. It may go correctly for a few days, or even weeks or months, but after that it will gradually lose, a very little at first, afterward more and more, until it will finally run out. You cannot get all traces of acid off as delicate a piece of steel as a hair spring. The following method I always use with perfect results: Take a piece of pegwood, trim one end flat, or rather of an oblong shape to fit the spring coil, fasten in the vise, and with your tweezers catch hold of the outer coil of the spring a little further back than the regulator pins will ever reach. Lay it on the piece of pegwood, and with a good clean cut pivot file gently dress off the top or outer side of the spring, filing lengthwise your work and pulling from your tweezers. After a little practice you can do it nicely without disturbing the shape of the coil. It is much easier than the acid, and you have the satisfaction of knowing that your work will stand just where you leave it.

HOW TO POLISH STEEL WATCH PARTS.—It is quite a job to get a nice bright polish on the steel parts of a watch, and nothing is calculated so much to increase the beauty of a movement. Contrary to the expectations of some, the polish does not depend on the kind of steel used, and any good, close-grained steel will answer. It should be properly hardened and tempered, and (after being brought as nearly as possible to its final shape by turning or otherwise) then ground with oilstone dust and oil till a fine gray surface is obtained. The polish is then put on with crocus and diamantine. Different kinds of "laps" are used by different workmen, the most common being soft iron, copper, tin, type metal and bell metal. The latter is generally preferred for small laps on account of its hardness, keeping its shape well, but type metal is also a very good material. Large type can be bought at any printing office very cheaply, being worn too much for printing from, and filed into shape. Bell metal slips can be obtained from any material store. The speed of the lathe should be quite rapid for polishing. But the chief requisite for obtaining a good polish is to have the surface truly plane or flat. An irregular surface can never have a perfect polish. All the corners should be cut clean and square, and the flats must extend to the very edge—if edges are rounded off it shows poor workmanship.

SOFT ALLOY.—An alloy made of 5 parts bismuth, 3 lead and 2 tin, melts at a temperature of 199° F. (less than boiling water).



EVADING REVENUE DUTIES.—Efforts are being made by the German dealers in gold watches of Swiss manufacture, to change the location of the gold watch case manufactories from Switzerland to Alsace, as this would save the high duty which has now to be paid on gold watch cases entering the limits of the German Empire.

STRIKING CLOCKS.—To the Chinese must be credited the first striking clocks, and the first modern clock probably appeared in the thirteenth century. Discoveries in regard to these early clocks confirm the existing opinion that monasteries were the seats of all learning in the middle age, and that much knowledge in mechanical pursuits especially was gained from the Moors of Spain.

SWISS EXPORTS.—The Winterthur (Switzerland) correspondent of *Industries* states that the value of exports of watches from the consular districts of Chaux-de-Fonds to the United States for the third quarter of 1887, amounted to £64,338, as compared with £59,055 in the same quarter of 1886. The value for the first nine months of this year was £172,229, as against £129,885 in the corresponding period of 1886.

THOSE FRENCH JEWELS.—The fact that the French nation had a quantity of crown jewels to dispose of has been advertised for at least eight years, and now, after everybody has purchased and gone home contented, more or less, these same jewels still succeed in engaging public attention. It is rumored that Paris is in a tumult over the discovery of frauds in the recent sale of the crown jewels. A syndicate of Parisian jewelers and government officials combined to foist upon foreign buyers a number of ordinary gems.

PARIS EXHIBITION OF 1889.—M. Berger, on behalf of the General Committee, has issued a circular warning intending exhibitors that certain unauthorized persons are calling on manufacturers, offering for a fee to obtain for them specially favorable space at the Paris Exhibition of 1889. These self-styled "agents" have, it seems, been at work among the foreign exhibitors. The Minister of Commerce and Public Works have asked the railway companies to concede 50 per cent. of their rates for the carriage of raw materials for the great exhibition of 1889. This concession was made to the exhibitors of 1878.

TOUCH WATCHES.—A touch watch is one by which the time of day may be felt. Breguet invented *une montre de touche*, in which the hours were indicated by eleven projecting studs round the rim of the case, while the pendant marked twelve o'clock. In the center of the back of the case was placed an index or hand which, when moved forward, would stop at the portion of the hour indicated by the watch, so that by means of the studs and pendant the time could be easily felt and counted. For instance, at 2.30 the index would stop in the middle of the space between the second and third studs from the pendant. To the blind, as well as to persons traveling by night, these touch watches must have been invaluable.

THE DISCOVERY OF THE PENDULUM MOVEMENT.—The isochronism of the pendulum was discovered in 1582 by Galileo, the famous astronomer, while he was a student of medicine in the University of Pisa. He observed that their oscillations, whether great or small, were performed at regular intervals, the truth of which he tested by his own pulse. He subsequently discovered that the time of a pendulum's vibrations could be increased or diminished at pleasure by corresponding manipulations of the pendulum, a fact which was ultimately demonstrated by Sir Isaac Newton. The first use that the young philosopher made of his discovery was to ascertain the rate and variation of the human pulse. Christian Huyghens, a clever Dutchman, is generally credited with having first applied the pendulum as a regulator of clocks.

A COMPLIMENT.—Miss Lillie Evans, a young opera singer, who sings in little *roles* in a London theatre, recently appeared in a new opera, and the musical critic, Mr. Herold, spoke of her as follows through the columns of a paper: "We would advise the young lady not to wear so many paste diamonds." This angered her, and she straightway sought redress in court to sue Mr. Herold for slander, because her diamonds, she averred, were genuine. The judge, in the presence of several hundred people, advised her to desist. "You come from a poor family," he said, "your family is so small that it barely suffices for a decent living, and, if anything, you should thank Mr. Herold for the compliment he paid you by stating that your diamonds are simply paste." She "saw the point" and retired under a sense of shame.

ANNE BOLEYN'S CLOCK.—Not the least valuable of the relics of bygone sovereigns of England, as a curiosity and work of art, is a little brass clock richly ornamented with *fleur-de-lys* and delicate engravings, now in possession of Queen Victoria. It was a gift from Henry VIII. to Anne Boleyn, on the occasion of their marriage in 1532. On the top of the clock is a lion bearing the coat-of-arms of England. The initials of Henry and Anne, with true lovers' knots, are engraved on their weights, together with inscription of "Most Happye" on one and the royal motto on the other. This curious little timepiece becoming the property of Lady Elizabeth Germaine, she presented it to Horace Walpole, who lodged it among the other collections in his sham castle at Strawberry Hill. At a subsequent sale of his effects this clock was purchased by its present owner for £110 5s., and placed in Windsor Castle, where it can be found in an excellent state of preservation and in comparatively good running order.

EXPERIMENTS WITH METALS.—Spring's experiments show that metals, in what we call the solid state, are really fluid, provided the pressure is sufficiently great. By mixing copper filings with zinc filings and submitting them to a very great pressure, he obtained a lump, and this lump was not a conglomeration of zinc and copper particles, but a true alloy, a piece of brass, such as he would have obtained had he fused the materials together in a crucible. Bismuth melts at 512°, cadmium at 442° and tin at 451°; the mean of these is 468°; but if these metals be melted together in the proportions for making "Wood's alloy," we obtain a silver-like metallic substance that fuses at 113°, or 99° below the boiling point of water. By mixing filings of these metals together in the same proportions, and submitting them to a pressure of 7,500 atmospheres, M. Spring obtained this alloy with its low melting point. By squeezing together in like manner a mixture of powdered sulphur and metal filings, he obtained true sulphides of the metals, that is, compounds which had lost the properties of both the sulphur and of the metals, and had acquired new and special properties peculiar to themselves.

PRECIOUS STONES AND THE TWELVE TRIBES.—With the Jews, the twelve tribes had each a stone sacred to it, the hyacinth being consecrated to Dan, the amethyst to Gad and the jasper to Benjamin. The tribe of Issachar cherished the sapphire, particularly the star sapphire, while the agate was holy to Naphthali and the emerald to Levi. Zebulon had the onyx, Reuben the cornelian and Asher the chrysolite. The beryl was sacred to Joseph, while Simeon had the topaz, and Judah, the largest and proudest tribe of all, had the ruby. In pursuance, probably, of the same idea the Christian church, in early times, consecrated certain jewels to the apostles, and as the church grew in wealth, it often happened that churches dedicated to particular apostles invested largely in the gems sacred to the patrons of the church. The jasper was sacred to Peter, the sapphire to Andrew, the chalcedony to James and the emerald to John, his brother. Philip loved the sardonyx, while the cornelian was holy to Bartholomew and the chrysolite to Matthew. The beryl was dedicated to Thomas and the chrysoprase to Thaddeus. James the Less had the topaz, Simeon the hyacinth and Matthias the amethyst.



—The following named members of the trade were noticed in New York during last month: E. P. Miller, Albany, N. Y.; A. Bennett, Binghamton, N. Y.; L. Emery, Jr., Bradford, Pa.; G. W. Fairchild, Bridgeport, Conn.; C. Hammond, T. Dickinson, Buffalo, N. Y.; R. H. Galbraith, Cincinnati, O.; W. G. King, Cleveland, O.; T. G. Hawkes, Corning, N. Y.; J. Phillips, Dallas, Texas; J. Nelson, Dunkirk, N. Y.; A. La France, W. H. Frost, Elmira, N. Y.; J. C. Lee, Gouverneur, N. Y.; G. F. Barr, Huntington, N. Y.; H. Byram, Indianapolis, Ind.; H. G. Rhoads, Ernest Zahm, Lancaster, Pa.; H. A. Osgood, Lewiston, Me.; P. D. Walter, Lockport, N. Y.; W. S. Wells, New Haven, Conn.; J. A. Seely, Ogdensburg, N. Y.; J. W. Young, Petersburg, Va.; C. H. Willson, Reading, Pa.; J. H. Muegge, G. Marcus, San Francisco, Cal.; E. T. James, Sing Sing, N. Y.; L. S. Stowe, O. W. Bullock, Springfield, Mass.; Isaac Swope, St. Louis, Mo.; Frank D. Enney, E. P. McClelland, D. McCarthy, Syracuse, N. Y.; E. D. Tisdale, Taunton, Mass.; F. W. Sim, J. H. Tappan, W. M. Whitney, Troy, N. Y.; Q. McAdam, Utica, N. Y.; E. P. Scott, Waterford, N. Y.; H. G. Shupp, Wilkesbarre, Pa.; J. A. Smith, Wilmington, Del.

—Among the dealers who have sailed for Europe since our May issue, we note: Messrs. G. Gallet and J. Racine, of Julien Gallet & Co., H. Zimmern, J. Eugene Robert, F. Kroeber, J. C. Cottier, D. Valentine, E. E. Kipling, R. N. Peterson, of Peterson & Royce, A. Green, of Lissauer & Sondheim, W. N. Walker, of Hayden W. Wheeler & Co., Max Kallman, of Lissauer & Sondheim, A. Frankfield, of Philadelphia, Joseph T. Bailey, of Philadelphia, F. G. Smith, of Detroit, H. Semken, of Washington, C. H. Willson, of Reading, Pa., J. A. Caldwell, of Philadelphia, G. M. Thurnauer, D. De Sola Mendes, E. W. Holbrook, of the Gorham Mfg. Co., J. W. and Eugene Miller, of Miller Bros. & Co., L. & A. Goodman, J. Kittel and Joseph Muhr.

—Among the arrivals we note: George Merritt, of the Waterbury Watch Co., B. L. Strasburger, M. D. Rothschild, Henry Dreyfus, Geo. A. French, of Wm. S. Hedges & Co., L. A. Parsons, of the Brooklyn Watch Case Co., A. K. Sloan, of Carter, Sloan & Co., G. Marcus, of Levison Bros., San Francisco, and James Allan, of Charleston, S. C.

—Mr. L. H. Keller will sail for Europe on June 9 with his wife.

—Shupp Bros., Wilkesbarre, Pa., are the successors to Mr. H. G. Shupp.

—Herbert Miller Blanding, a well known tool maker for W. H. Wilmarth & Co., Attleboro, Mass., died suddenly of pneumonia May 10. He was forty years of age and was noted as a fine workman.

—The attention of the trade is called to the card of King & Eisele, who claim that they are offering their "Snaps" at great bargains for a short time.

—Mr. Wm. H. Glover, Jr., of Hazleton, Pa., publishes a little advertising sheet called the *Hazleton Jeweler*. He might make it more interesting by leaving out a joke or two and inserting some of our "Fashion Notes."

—The death is announced of Mrs. Mary Riggs Downing, at the age of ninety-two. She was the widow of the late George R. Downing, an old time manufacturing jeweler, whose name is familiar to all old members of the trade.

—Mr. Augustus K. Sloan, of Carter, Sloan & Co., who returned from Europe on the *Fulda* on May 21, brought a quantity of particularly fine precious stones to be used in the mountings made by his firm. Many novelties will be placed upon the market during the coming season.

—Mr. B. Heinrich, of Richmond, Va., made an assignment recently. His liabilities were put at \$6,000 and the assets not stated.

—Mr. Horace A. Comstock, of Indianapolis, Ind., failed May 19. His liabilities are in the neighborhood of \$4,000, and the assets are placed at about \$3,000.

—The Pairpoint Mfg. Co. have nearly completed the improvements at their New York office, 20 Maiden Lane. The window front has been altered somewhat and a very attractive display will be kept therein. The interior arrangements will be changed.

—The suit of P. L. Miles against C. F. and Louis Uhl, his late partners in the firm of P. L. Miles & Co., Cleveland, O., has reached a decision by the court ordering the dissolution of the firm, and allowing Mr. Miles to buy out the interest of his partners. The Uhl brothers have filed a notice of an appeal to the higher court.

—Three professional burglars made an attempt last month to rob the safe of Mr. J. O. Holden, of Quincy, Mass. They had already damaged the safe considerably, but before they could open it they were discovered and beat a hasty retreat without taking any valuables. The slight damage to Mr. Holden's safe was partly repaid in the large amount of burglars' tools which the thieves left in their flight.

—Senator Griswold says he can "invent as well as legislate." He has lately invented a patented handkerchief holder, which S. M. & F. J. Griswold are now manufacturing in many patterns in gold, silver and fine gold plate. It is somewhat like a bar lace pin in form, and it is fastened to the clothing in the same manner. The front part, however, opens by means of a small spring and the handkerchief is held in this part. An illustration appears in this issue in the advertisement of S. M. & F. J. Griswold.

—The affairs of N. Matson & Co. are hardly settled yet. Only one bid was received by the court, and that was from the committee of creditors represented by Messrs. Wm. R. Alling and James B. Snow. Their bid was \$35,000, and the heirs of N. Matson's estate objected because they held that the bid was too low. The receiver, Mr. Forman, said that he thought he could dispose of the stock at better figures if allowed until January 1, 1889, to do it in, running the business in the same manner as hitherto. The court reserved final decision for a few days, and extended the time for receiving bids.

—A young swindler was arrested in Binghamton, N. Y., last month while attempting to pass a false check on E. D. Vosbury & Co. His name is W. H. Dunham, and he is said to be of a respectable family living at Plattsburg. He recently swindled Mr. Harry F. Legg, of Minneapolis, by means of a bogus check, and it seems that young Dunham was recognized in Vosbury's store by a traveler who had received a description of him from Mr. Legg, and was on the lookout for him. It is said that Dunham has been operating in several other places in the West. At Binghamton he had a young woman with him who claimed to be his wife and she was taken to jail with him.

—The failure of Slemmons & Ganter, of Pittsburgh, early in May and the subsequent developments in the matter, have caused much talk among the trade. At the time of the failure the liabilities were put at \$52,000 and the assets nominally at \$54,000. It appears from the published reports that the members of the firm had some trouble between them, and Mr. Ganter began a suit against Mr. Slemmons alleging that he had drawn out more money from the firm than the amount of the capital he had put in. A receiver has been appointed by the court, the Fidelity & Trust Company acting in that capacity.

—The Brooklyn daily papers are making much ado about the \$100 which a jeweler, Mr. H. J. Bridges, of 570 Fulton street, paid to a detective for the recovery of a diamond ring which had been stolen from his store. The ring was worth about \$75 and belonged to a customer who, after it was stolen, would have no other ring but his own in return. So the jeweler advertised a reward of \$100 for its return. Detectives are not allowed to accept pay from private individuals except they have permission from headquarters, and when it became public that this detective had received this \$100 an investigation was demanded by the papers, and this is now under way.

—Henry Dreyfuss & Co. are opening, and have for sale some special inducements in diamonds, pearls, rubies, etc., being purchases by Mr. Dreyfuss during his recent trip to Europe. As this firm have a house in Paris with unusual facilities for purchasing, and are receiving weekly shipments from them, close buyers would do well to keep posted as to their goods and prices.

—It is only about a month since a swindle happened in Troy, where the swindler used a Catholic convent to help him in his novel game. Now we have to record another swindle in Brooklyn of almost an identical nature. Mr. James Hart's store was visited by a very pious looking individual who selected a \$200 diamond cross from the stock. He wished to have it sent to a certain convent on approval, as he said he had no authority to purchase it, and it was to be presented to the Mother Superior who would have to see it first. He then left the store and made his way straight to the convent, where he introduced himself by a fictitious name and said that his brother would presently arrive with a motherless child which he wished to place in "this admirable institution." He was allowed to remain alone in the parlor to wait for his brother, and soon the door bell rang and he kindly answered it personally. The clerk from Hart's let the priestly-looking man have the cross, and allowed himself to be shut in the parlor with the excuse by the reverend gentleman that the Mother Superior was in another part of the building, and he would presently return with the money if the cross was satisfactory. After waiting for twenty minutes or so, the clerk became impatient and made his presence known to the sisters of the institution, who were surprised to find the young clerk in the place of the other gentleman. After the clerk had explained the situation, he and the ladies of the institution were horrified to learn that they had all been duped.

—On the evening of May 23 the jewelry district was treated to the terrible spectacle of a great disaster at the corner of John street and Broadway. The buildings which are being torn down there to make place for the handsome new office building promised to jewelers by Mr. Austin Corbin, were in process of demolition, and the workmen had reached the third floor from the ground. They piled too much of the debris upon the floor of the rear part of the building, formerly 7 John street, and the floor caved in and the whole pile of mortar, dirt, bricks and beams crashed its way to the cellar, burying beneath the ruins about a dozen men. There were some fifty persons at work upon the building at the time, and the confusion that ensued was intense. The walls were left standing but they were in a tottering condition, and a man had saved himself by clinging to the top of one of them. He did not dare to move, however, fearing that the wall would go down if he did. He was afterwards rescued. The scene was terrible to behold. Workingmen and citizens worked to extricate the buried men, who were brought out covered with dirt and half smothered. Four men were quite badly injured and were sent to hospitals. Several others were seriously hurt, but went unaided to their homes. But one poor fellow lay underneath the ruins for nearly half an hour, and despite the frantic efforts of his rescuers to get at him sooner, he was dead before they got him out. It appears that the accident was the result of the insecure manner in which the floor supports were placed, and the wonder is that the former tenants were not precipitated to the cellar before the destruction of the building began. The work of destroying the building is now progressing as though the terrible calamity had not happened, and within a year hence the jewelry trade may find on this spot a fine building of ten stories, built especially for them, at a cost of probably \$200,000.

—Swindles and swindlers are becoming so rife that THE CIRCULAR may soon find it necessary to open up a special column to report the swindles that occur in the trade. Not only in this city and even in the heart of the jewelry trade, but also in the large cities and towns all over the country, these swindlers are becoming so numerous and their operations so aggressive, that it is a wonder some concentrated and powerful effort is not put forth by the authorities to stop them. Although the jewelry trade has been a great sufferer from this class of evil, other trades have been treated quite as badly, and individuals in many instances, have been swindled out of money or valuables. This issue of THE CIRCULAR contains but a partial account of the more important fraudulent operations, as they have been reported by correspondents or the daily press, and some of the cases present ludicrous features which partially alleviate the strong feeling which ought to exist against all classes of swindlers. Many of the swindles that occur are never reported, either because of the small values involved or the backwardness of the dupes who would not let the public know in what a simple way they had been robbed.

—If there is anything to test the enterprise of a manufacturing concern, surely there is no greater test than a presidential campaign. Wm. H. Luther & Son, of Providence, are the largest manufacturers of campaign badges in the country, and they are now turning out an average of five hundred gross of these badges every day. At the time of the last presidential campaign, Luther Bros., the predecessors of Wm. H. Luther & Son, did an immense business in this class of goods. But the present firm have made greater preparations and have larger facilities than the old firm had. The badges now being made are kept awaiting the advent of the candidates. As soon as the nominations are put forth by the political conventions, the machinery of Wm. H. Luther & Son is set going to print the photographs. All this work is done on the premises, and within twenty-four hours after the nominations have been made thousands of grosses of badges will be complete and ready for market. The New York office of this firm, No. 200 Broadway, will be the distributing point, and all orders for badges will be filled there.

—Mr. Isaac M. Miller is now the happy owner of an elegant driving horse with a record. He recently attended the great Fasig sale of blooded horses at Cleveland, and there purchased a fine seven year old grey gelding known by the name of "Oliver." He is a handsome steel dapple grey, thoroughly broken as a roadster, and has trotted a mile in 2 37½, but it is confidently believed he can beat 2.30. This makes an elegant pair of roadsters with which Mr. Miller takes delight in spinning over the beautiful and romantic roads around the Orange mountains in New Jersey. "Oliver" is strongly bred in Membrino Chief blood, crossed with that of Pilot, Jr. His official pedigree is a lengthy affair, and well known to lovers of fine horses. Mr. Miller is extremely fond of good horses, and hereafter proposes to throw dust in the eyes of all his competitors on the road, among whom are several well known jewelers of this city. We shall be able to speak more definitely of the speed "Oliver" possesses after we have had a drive behind him.

—The trade in general will sympathize heartily with Mr. Stephen P. Cox in the recent affliction that has fallen upon him. His wife, Ann Eliza, died of pneumonia May 22, at their residence in Brooklyn. Two months ago she fell upon the ice, breaking a leg, from which injury she was slowly recovering when pneumonia was developed, from which she died. This was the sixth attack of this dread disease she had suffered from. The married life of Mr. and Mrs. Cox had been a peculiarly happy one, extending over a period of thirty-two years, marred only by the loss of their children. Four years ago their eldest daughter, a brilliant girl of 22 years, who was at the time engaged to be married, died very suddenly, leaving the parents childless and nearly heartbroken. Soon after, Mr. Sedgwick, partner and life long friend of Mr. Cox, died unexpectedly, while the deaths of other near relatives or friends have added to the grief Mr. Cox has been called upon to bear. The last stroke, however, is the severest of all, for Mrs. Cox was a devoted wife, her husband's inseparable companion, intelligent, cheerful, devoted to good deeds in her neighborhood, and enjoying the respect and esteem of all who knew her. Her funeral services, held on the 25th, were largely attended, the interment taking place on the following day.

—A swindler, described as being of light complexion, with a slight moustache and light hair, of medium height and a good judge of diamonds, tried in one day last month, by a very ingenious method, to become possessed of a large amount of precious stones. He entered the store of Mr. J. M. Lyon, 16 Maiden Lane, and introduced himself as S. H. Barnes, saying he had been recommended there by Mr. T. M. Knight, of Philadelphia. He wished to look at some diamonds, and said that Mr. Knight had not had exactly what he wanted. Mr. Lyon was busy at the time, and the supposed Mr. Barnes said he would return later. After he had left a letter came by post to Mr. Lyon, purporting to be from T. M. Knight, of Philadelphia, saying that if a Mr. Barnes bought any diamonds he (Knight) would expect to receive a commission on the sale. As the stranger did not return, Mr. Lyon wrote to Mr. Knight saying that Barnes had not bought anything yet, but if he did Mr. Knight would be allowed the commission he expected. The next morning Mr. Lyon received a telegram from Philadelphia, warning him that Barnes was not known to Mr. Knight and that L. Krug & Co., had also been seen by the same man. It thus transpired that the same stranger had been to Krug's, giving his name as George Byers. Here he had a large quantity of goods picked out and tendered a certified check in payment for them. Mr. Krug would not accept the check without first cashing it, so the stranger left, saying he would get the cash for it himself. L. Krug & Co. shortly afterwards also received a letter similar to that received by Mr. Lyon, but the swindler has not returned. His whereabouts have not been discovered, but he evidently got wind of the discovery of his trick.

—Mr. R. J. Herbert has removed to 176 Broadway, with Roberts & Yerrington.

—Mr. J. H. Klotz, of Toledo, Ohio, has offered to compromise with his creditors for 50 cents on the dollar.

—The enamel dial on the Cheshire watch is favorably commented on by the trade. This popular cheap watch is meeting with a steadily increasing demand.

—Ryan & Barrows are the successors of Glendhill & Co., Essex, Conn.

—Schofield, Aston & Co., of Plainville, Mass., made an assignment last month. Their liabilities are reported to be about \$3,300, \$2,000 of which are covered by a mortgage.

—Mr. Herman T. Wolf, of Philadelphia, has published a little pamphlet for distribution among his patrons, entitled, "Some Popular Errors Regarding Diamonds and Other Precious Stones."

—A report in the daily papers gives an account of great havoc at Canton, O., created by the storm. The new building of the Hampden Watch Co., is reported to have sustained a damage of between \$50,000 and \$60,000. There are doubts for the safety of all the employees.

—Mr. E. A. Thrall has just finished a little spring house cleaning in his store, 3 Maiden Lane, and the walls and ceiling have been freshly papered in a handsome manner. He is now receiving some of the invoices of precious stones, etc., which he bought in Europe while on his trip recently.

—Mr. Edwin S. Case, formerly of the firm of E. S. Case & Co., Providence, died late in April of rheumatism of the heart. He was 65 years of age, and from his boyhood he had been in the jewelry business. Mr. Case withdrew from the firm of E. S. Case & Co. last summer, when it was succeeded by Tillinghast, Mason & Co.

—Smith & Knapp have issued a new price list of watches in pamphlet form, pocket size. It includes a price list of all the popular watches, and also several valuable tables which are very convenient for dealers in watches and diamonds. One of the tables referred to gives weights, values, etc., of the gold in watch cases. The price list can be had by regular dealers only upon application.

—We have recently added to the list of valuable instruction books for sale by The Jewelers' Circular Publishing Co., two books on optics which every optician should have for ready reference. Dr. Bucklin's little book is very popular, and upwards of 2,000 copies have been sold. Bohne's Hand Book is new but is fast proving popular. These books will be sent post paid on receipt of price.

Mr. Eldin B. Hayden, of 67 Nassau street, who also has two retail stores in Brooklyn, made an assignment on May 15, giving preferences for \$1,100. His assets are put at about \$13,000 and liabilities about \$20,000. The cause for his failure is said to be the general falling off in business and the robbery of about \$6,000 worth of stock a few years ago, of which but little was recovered when the thieves were captured.

—The Baltimore, Md., *Daily News* says: "The Princess of Wales and her associates are setting the fashion of wearing as much jewelry as possible," and a correspondent in that city asks us to "please expatiate" upon that item. Well, THE CIRCULAR is "expatiating" all it can on the fact that jewelry is becoming more popular, not only in English society, led by the Princess of Wales, but also in all society in this country. The retail jeweler should do a little "expatiating" through the columns of the local press on this fact.

—Mr. Chas. F. Wood has removed his offices in the Benedict Building, 169 Broadway, from the third floor to the second floor. He now has a very pleasant office in the corner of the second floor, with windows upon Broadway and Cortlandt street. He has excellent light from both directions for the examination of precious stones. Mr. Wood is the "headquarters" for a fine line of rose diamonds and small colored precious stones, of which he makes a specialty. These are of his own importation. As an engraver and incruiter of precious stones, Mr. Wood is well known to the trade, and has one of the completest establishments in the trade for this kind of work.

—The New York Mineralogical Club, in connection with the Mineralogical Section of the New York Academy of Sciences, held a meeting in Library Hall, Columbia College, on Monday evening, May 14, at 8 P. M. The chairman of the section, Mr. Geo. F. Kunz, read a paper on "Progress and Study of Precious Stones During the Last Ten Years," treating of the yield, discovery, mining and cutting of diamonds, rubies and sapphires, and a resumé of discoveries in this and other countries. In regard to artificial diamonds, he stated that it was believed the diamonds exhibited by Mr. Hannay before the Royal Society were not made by him, but were fragments of natural crystals. The remarks were illustrated by stereopticon.

—The handsome early closing cards issued gratuitously to the trade by THE CIRCULAR have again been distributed, and a great many of them are already in use. The majority of firms, however, will begin on the first Saturday in June to close at one o'clock; but a great many others have decided to close at twelve o'clock instead of one. THE CIRCULAR has plenty of cards of both kinds on hand, and can supply any firm in the trade with either kind.

—The New York Jewelers' Board of Trade is one of the most flourishing of our trade organizations. Its membership, which is steadily increasing, now includes some of the largest and most influential houses in the trade. The Wm. L. Gilbert Clock Co. was recently elected to membership, and other important clock companies are expected soon to join. M. Fox & Co. were also elected to membership a short time ago. The Board is constantly improving in the effectiveness of its work, and the activity and interest displayed by its officers and members indicate that the work of the Board will become a greater power than ever. Mr. George Carlton Comstock has been appointed attorney to the Board and has his regular office hours in its rooms, when the members can confer with him free of charge. Mr. Comstock may also be expected to serve the Board in failure cases which require quick action. Mr. Condit, the Secretary of the Board, reports that its affairs are in better shape than ever, and that the outlook is very favorable for increasing prosperity. The Board has been signally successful in recovering claims in several important instances recently, and the reports given to members have been regarded as very satisfactory. Mr. Condit recently received an appointment as notary public.

—A very peculiar instance of detection of smuggling occurred in Boston recently, one that is possibly without a parallel in the history of the port. It is a common opinion that goods which have passed the ordeal of inspection when landed without detection are safe, and are no longer liable to seizure even though known to have been smuggled. It is because of this opinion, possibly, that a package said to contain 8,026 precious stones has been seized by the Custom House in Boston. The story of the case is this: Among the passengers from Liverpool upon the Cunard steamship *Bothnia*, Oct. 4, 1887, was a lady whose son was in the employ of the American Watch Company, of Waltham. The *Bothnia* arrived in Boston on or about Oct. 14, and this passenger landed. Among her baggage was the package above referred to. This package was not declared or entered for appraisement, and was not discovered by the inspector who examined the baggage at the pier. Within a few days these stones—garnets designed for use as jewels in watch movements—were offered for sale to a well-known material dealer. Previous to purchasing them this dealer looked about for a market for the jewels. The special agent for the Treasury, learning of this transaction, seized the jewels, and they are now held by the Collector of the Port of Boston, subject to the action of the Secretary of the Treasury. It is extremely rare that a seizure is made, as in this instance, over six months after the landing of the goods.

—Few, if any, business houses in the jewelry trade are more pleasantly situated than Heeren Bros. & Co. in their new building, No. 525 Wood street, Pittsburgh, Pa. The building was recently built, especially for the transaction of the various branches of the jewelry business at wholesale. It is 25x90 feet and is five stories high. The first floor is fitted up in fine shape, and contains a complete stock of tools, materials, etc. On this floor is a large safe constructed especially for keeping watch material. This is beautifully finished and every way suitable for the purpose intended. An idea of the vast assortment of watch material kept in it may be had from the fact that the drawers in this safe contain 5,800 compartments. The second floor contains the counting room and the sales room for watches and jewelry. This floor is handsomely furnished and contains four large new safes. The third floor is elegantly arranged as a show room for solid and plated silverware. The fourth floor is occupied by the clock department, in which an excellent line of foreign and domestic clocks are displayed. The top floor is a completely furnished factory where all the manufacturing and repairing is done. A full staff of experienced workmen is here kept employed. The basement of the building is used for a packing room, where is located a large vault for the safe keeping of valuables, etc. All the departments of the house are handsomely furnished and decorated, and the arrangements are of the most approved and modern styles. The manufacturing department makes a specialty of rings and diamond mountings. The stock of goods in every department is new and fresh, everything having been recently purchased. The firm were recently burned out and none of their old stock was left in condition to sell. The popularity of this firm, which has existed for twenty years, is well attested by the success it has met with in the past.

—Mr. C. W. Schumann, Jr., sailed for Europe on May 23 on the *Saale* with his wife.

—Simpson, Hall, Miller & Co.'s store, at the corner of University Place and Fourteenth street, is very nearly completed.

—The Princess initial ring still continues popular with the trade. It is extensively advertised and kept in stock by most of the leading jobbers.

—Mr. Joseph F. Chatellier has nicely arranged and fitted up his new office at 857 Broadway, into which he moved last month. The entrance to the building is on Seventeenth street.

—The Illinois Watch Company make an important announcement to the trade in their advertisement this month. Attention is called to this notice, which can be found on page 49.

—Odenheimer & Zimmern report a growing demand for their interchangeable initial goods. Rings have the largest sale, but lockets and sleeve buttons are also having a fair demand, and the sale is increasing.

—J. B. Bowden & Co. have completed their new factory in Brooklyn, and have greatly increased their facilities. A house that produces rings exclusively is pretty apt to know how to make them, and this firm shows an excellent line.

—Mr. Joseph Muhr recently opened his New York office at 18 Maiden Lane in fine style. Cards of invitation had been issued, and during the day the office was crowded with friends and members of the trade. Mr. Muhr has just left for a brief visit to Europe.

—The firm of Hancock, Becker & Co., of Providence, was dissolved by mutual consent on May 23, Mr. Henry Becker retiring. The business will be continued under the same name at the same place by Messrs. Charles E. Hancock and George Becker.

—Our readers will notice the advertisement of the "eight pointed star" mainspring in another part of this issue. These mainsprings are so well known and so widely used, that it is hardly necessary to speak of their high quality. The same family has manufactured them for the last fifty years.

—Frank M. Whiting & Co. are fitting up their new office at 857 Broadway in an elegant manner, with large show cases against the walls. They will display here a sample line of their fine silver goods. They propose to make a larger and more complete line for the fall season than ever before.

—The International Fair to be held at Buffalo, N. Y., from September 4th to the 14th, 1888, is attracting widespread attention, and many of the Buffalo jewelers are much interested in it. Liberal premiums are offered to exhibitors, and the Buffalo "boom" is to be greatly strengthened by this exhibition.

—Day & Clark are showing some of the most novel ideas in gold jewelry ever manufactured by them. For the coming season they are more prepared than ever to supply their trade with their well-known line of strictly 14-k. goods. In such a staple as bead necks they keep a large stock and a complete assortment of all sizes and patterns.

—Mr. Horace Bedell died on May 23 at his residence in Newark, N. J. He was sixty-one years of age. In 1866 he became interested in the jewelry business, entering into the partnership of McIntire, Champenois & Bedell, which, in 1876, became McIntire & Bedell. From this firm he retired in 1885, and has since been engaged in the varnish and oil business.

—The trial of William H. Payne still lags before the courts. He has recently secured a powerful addition to the number of his counsel in the person of a former law partner of District Attorney Fellows. It is not expected that the trial will occur before the fall, and meanwhile it is to be hoped that the prosecutors will not be idle, nor be swerved from their duty to give this man his just due.

—Mr. John A. Riley shows a very attractive advertisement this month. The three-strand bead necklace which appears as an illustration, represents a very large line in silver and gold which he keeps in stock. These are made in seven sizes and in single, double, three, four and seven strands. Mr. Riley is well supplied this season with fine designs in gold and silver jewelry, and his line of hair pins and combs is especially fine.

—Edward Maley, alias Bulyer, was captured recently in Pittsburgh. He is implicated in the robbery of a jewelry store in Johnstown, Pa., when \$3,000 worth of goods was stolen. On his person and in his lodgings when captured was found jewelry to the value of about \$2,000, consisting of gold rings, gold chains, seals, scarf pins, thimbles, gold and silver watches and a lot of miscellaneous articles. He is an old time burglar, and two years ago served a term in the penitentiary.

—B. & W. B. Smith are at present engaged on two large contracts for fitting up stores. Mr. J. H. Johnston's new place on Union Square, opposite Tiffany's, is being done by this firm, and the Gorham Mfg Co. are having a floor in their elegant building fitted up for their leather and ecclesiastical departments. The character of the work done by B. & W. B. Smith is well known to all who have visited any of the large establishments in our trade, for a great part of the furnishing of the best of those establishments has fallen to this enterprising and successful firm. But it is not in the jewelry trade alone that they have achieved such distinction, for in all trades and also in fine residences where rich work is required, B. & W. B. Smith are the experts to produce the finest plans and the most beautiful results.

—Cross & Beguelin are kept busy in these dull times in two or three departments of their extensive business. The demand for the celebrated "Centennial Chronograph" manufactured by this firm, is said to be greater than ever, and the supply is hardly equal to the demand. Those who do not know the merits of this low priced chronometer should take pains to investigate, as most dealers who have once had them order more. Cross & Beguelin have just issued an illustrated sheet which they will send to dealers on application. It contains handsome woodcut illustrations of sixty styles of gentlemen's stone rings, and a good assortment of initial and emblem rings and other emblem goods. Dealers who do not keep a full assortment of these goods in stock will find it convenient to have one of these illustrated sheets to show.

—Mr. Henry S. Crump has secured the position of manager of the new store to be opened shortly by Mr. J. H. Johnston, opposite Tiffany's, on Union Square. Mr. Crump is already a well known and popular man, having been well acquainted in the trade for over twenty years. He was with Mr. D. Valentine for eleven years, and has been with Mr. William Moir for the past eleven years. He is a first-class jeweler in every respect, an expert in precious stones, a shrewd business man and a popular salesman. He is well liked by all who know him. He is to be congratulated on this last evidence of his popularity, for the store of which he is to become manager is expected to be quite an important one among New York's first-class jewelry establishments. And Mr. Johnston is to be congratulated on his fine prospects and his increased prosperity.

—The Towle Mfg. Co. have published a large sized, sixteen page catalogue containing the illustrations of a complete set of silver table ware of the "Pomona" pattern. The book, it is needless to say, is a work of art, as is everything that this house attempts either in the line of advertising or of manufacture. The illustrations and the typographical appearance of the book are superb. Certainly the "Pomona" pattern receives its merited due in such a beautiful book. There are 18 different styles of forks, 22 of spoons, 20 of knives and 35 different combinations can be obtained from the numerous articles of the "Pomona" pattern. Three illustrations of knives are shown in the advertising pages of this issue. The Towle Mfg. Co. sell only to the legitimate trade, and neither cater to nor accept the patronage of outsiders. Dealers can obtain this elegant catalogue on application.

—The Dennison Building, 198 Broadway, which has been entirely refitted during the past few months, is now nearly finished. The jewelry firms who ventured to move into their offices on the first of May have been a little inconvenienced by the presence of the workmen, but the inconvenience was soon over, and the new offices of these firms are all that they could have desired. An elevator carries passengers up to the top floor, and the floors and hallways and offices throughout the entire building have been fitted up in hard wood of a light color. Steam heat has been introduced, and it is expected the few remaining offices will soon be taken. The Dennison Mfg. Co. occupy the lower and first floors, and their stock will have plenty of room for display and arrangement. F. I. Marcy & Co. have a nicely furnished office, with a pair of very elegant portieres to set off the elegant display of fall patterns in Acme lever buttons. Wade, Davis & Co., Henry Carter, Mabie, Todd & Bard, Ketcham & McDougall and Charles Glatz are all comfortably situated and their offices are all prepared for the reception of customers.

OUR WORKING DESIGNS.

Our artist this month presents a page of designs with more ideas for the manufacturer and workmen. Nos. 1 and 3 are designs for short earrings, one with a screw and the other with a joint and catch back. No. 2 is a novel hair ornament design. No. 5 is a very simple design for a hair pin. No. 7 shows two designs for sleeve button backs, the one a screw, and the other a lever.

—Sandland, Capron & Co., have removed their New York office to 176 Broadway.

—The Columbus Watch Co., now has its New York office permanently at Room 22, in the Knapp building, 41 Maiden Lane.

—Daniel Spinoza, diamond dealer, of Boston, failed last month. The liabilities were reported \$6,438.70, and assets small.

—Gluck & Black, of Birmingham, Ala., have been appointed official inspectors of watches for the Alabama Great Southern Railroad.

—Riley & Osborn, brass and fancy goods manufacturers, of Newark, N. J., are succeeded by the Riley & Osborn Manufacturing Company.

—Mr. Carl T. Thayer, of Minneapolis, Minn., has removed to 414 Nicollet avenue. He was formerly associated with Mr. E. P. Thompson, at 428 Nicollet avenue.

—Mr. Stephen Preston, Jr., has removed his store in Harlem to 133 East 155th street, where he has a handsome store and a parlor connected with it fitted with optical appliances, etc.

—The report which has been somewhat circulated that E. B. McClelland, of Syracuse, N. Y., would remove his business to Chicago, is incorrect. He is satisfied with his present business and prospects, and will make no change.

—Mr. Charles H. Barker, formerly of Toronto, Ont., has removed to West Superior, Wis., where he has entered into a partnership under the name of F. H. Teetham & Co. This firm has also bought out the stationery business of S. E. Tubbs.

—Mr. A. Lyons, of 36 Maiden Lane, is now importing a full line of Jewelers' Boxes, the designs and manufacture of which are something new. Mr. Lyons expects, from the prices at which he can sell to develop a considerable trade.

—The Seth Thomas Clock Co. are having continued success with their watches. They have just added an 18 size hunting movement to their list, which hitherto contained only open-face movements. The new movement will be on the market shortly, and may be had of the leading jobbers.

—The *Progressive Age*, a journal devoted mainly to the subjects of gas and electricity, has been removed from Philadelphia to this city, and will hereafter be issued semi-monthly instead of monthly as heretofore. It is a handsome, progressive paper, and good authority on the subjects of which it treats.

—E. P. Roberts & Sons, of Pittsburgh, Pa., celebrated the 44th anniversary of their business by an opening on the 10th of May. They recently added the building at Fifth avenue and Market street to their other stores, and the entire place has been elegantly fitted up and stocked with a fine line of goods.

—D. Schroeder & Co., of Cincinnati, Ohio, have removed their office from 53 West Fourth street, to the spacious store at 252 Race street. Oskamp, Nolting & Co., have taken the office vacated by D. Schroeder & Co.; and this, in addition to their old office gives them increased facilities for the transaction of their business.

—The Geneva Optical Co., of Geneva, N. Y., can be classed among the more fortunate as well as enterprising houses. They have a large well lighted, and well appointed factory employing about one hundred operatives, and they say, they have plenty of work for them. Their factory is certainly a busy place and bespeaks well for the popularity of their goods.

—Mr. W. W. Oliver, of Buffalo, N. Y., tells the trade in his advertisement this month why his No. "o" polishing lathe is "the best." An illustration of the lathe is also shown, and the trade can judge for itself. We advise all interested to apply to Mr. Oliver for one of his illustrated catalogues which are sent free. Mr. Oliver manufactures a line of jewelers' machinery without which no jewelry shop can be complete. The lathe mentioned above can be had through any jobber.

—The large tower clock described in our April issue, constructed for the Georgetown College, has been completed and is now the great attraction in that section of the country, being the largest and finest clock ever seen there. The Seth Thomas Clock Co. were the constructors, having made it for H. G. & J. E. Wagner, of Georgetown, D. C. The Seth Thomas Clock Co., have also put up another quarter-striking clock at the Wyoming Seminary, Kingston, Pa.

—At last Joseph Keepers, the noted diamond thief, has received his reward. He was recently convicted in Baltimore, Md., of swindling Mr. A. J. Hubbard out of a diamond worth \$250, and he received a sentence of four years in the penitentiary on May 14th. During his last trial Keepers again used every technical legal advantage that he could, and the court treated him to a very lenient and fair trial. Keepers, in this trial admitted that he once escaped a similar conviction in New York by a slight legal advantage, the case he referred to being that of E. Aug. Neresheimer & Co's., which will be recalled by our readers.

—The United States Watch Company, of Waltham, seems to be in a state of general activity and prosperity. Since last fall, when superintendent Woerd severed his connection with the company, it has been engaged on three new watches. One is a 16 size made in seven grades, both gilt and nickel, and these are now being put on the market. Another is an 18 size, open face, and hunting. This is in six grades, and is expected to be ready for market by July 1st. All the working hands who went out last fall when the "Dome" watch was discontinued, and tools for the new movements were begun, have come back, and the factory now has a good working force, with new arrivals every day. The outlook is reported never so hopeful, and Treasurer Hammer is bent on prosecuting the enterprise with unabating vigor.

—An ingenious swindle of a farmer was related in the daily papers last month. The farmer a well to do man, in Jefferson county, N. Y., was visited one day by two strange men who acted mysteriously about his premises, and who afterwards told him a long story in a seemingly reluctant manner. They said they had come from a gold mine in Colorado, and that on their way to the East a fellow miner of theirs had died suddenly. Just before he died, said they, he had told them of two large gold bricks which he had buried some years ago in Jefferson county, and he had drawn a sketch of the spot where the treasure could be found. And they held before the gaze of the gullible farmer a map of his property with a spot marked off where the pretended gold might be found. The farmer was completely taken in, and in the company of the two strange men went to the spot, and the three men dug for the gold. They dug the first day without success, but upon the next day their patience was rewarded and the two bricks were found by one of the strangers. Instead of wrangling over the ownership of the gold, these clever swindlers innocently suggested that they were entitled to a fair share of the gold, and the old farmer willingly agreed to pay them their share after the value of the gold was determined. The bricks were bored at spots indicated by the strangers, and the farmer took the borings to Syracuse, where they were pronounced pure gold. The old farmer was thrown entirely off his guard by the seeming honesty of the men, and by the result of his investigations, and he paid them at once \$5,000. He then started with them, upon their advice, for Philadelphia, to sell the gold at the mint. After they started it is presumed the strangers talked further into the old man's generosity, for at Utica they left the train and the farmer borrowed \$2,500 on his farm, and this he also handed over to the two men. Before they reached Philadelphia, the strangers left the car saying they were going to get lunch, but they never came back again, and when the farmer reached the mint he was chagrined to learn that his bricks were bogus. The poor old farmer, however, is more to be laughed at than pitied, for he is the same individual against whom a judgment of \$8,000 was granted to a school teacher for breach of promise only four weeks before this swindle.

—Wm. C. Greene & Co. have removed to 17 Maiden Lane.

—The E. Howard Watch & Clock Co., have put up a new town clock for the town of Morristown, Pa.

—Mr. Frank Weidenfeld, formerly of 1928 3d ave., is the successor of J. P. & J. G. Van Wyck, at Hudson, N. Y.

—H. B. Claflin & Co., have begun to act as wholesale agents of the New York Standard Watch co., in New York, Manchester and Paris.

—George F. J. Hammersmith, a well-known jeweler of Birmingham, Ala., was accidentally shot by a friend, on April 26th, and died shortly afterwards.

—Leimbach Bros., have dissolved partnership. Mr. Philip Leimbach has retired from the diamond business entirely, and the business will now be conducted by Mr. Frederick E. Leimbach.

—At a recent meeting of the board of directors of the Gorham Mfg. Co., in Providence, Mr. Edward Holbrook was elected to fill the unexpired term of treasurer, Mr. Gorham Thurber having resigned that office.

—Louis Seaforth, a young man recently in the employ of the Aurora Watch Co., has been arrested with a cousin of his for the alleged robbery of some watch movements from the factory at the time he left the company's employ.

—Bowman & Musser of Lancaster, Pa., have bought out the entire stock of tools, materials and optical goods formerly kept by Lissauer & Sondheim. Lissauer & Sondheim will devote their entire attention to watches, diamonds and jewelry.

—Mr. J. C. Dueber, has bought a yacht to be named in honor of his daughter, Stella May Dueber. It is 120 feet long, 22 feet wide, and draws but 20 inches of water. Mr. Dueber will use it during the present season on the Mississippi and its tributaries.

—Albert Lorsch & Co., are showing several novelties in fancy and colored stones, which are suitable for gold jewelry, and the better quality of plated. Manufacturers will find it profitable to inspect these goods, as it is probable that they may become quite popular by the coming season.

—The Great Western Watch Co. filed articles of incorporation at Lincoln, Neb. April 18th. The capital is to be \$250,000. The officers are C. D. Cramer, president, C. S. Quick, vice-president, J. M. Beardsley, treasurer and C. G. Schielerberger, general manager. Mr. Schielerberger, has sold to the company his patents for an improved system of watchmaking.

—Mr. F. Jeandheur, Jr., has issued a new price list of gold and silver electro-plating and fire-gilding, etc. The high class of work done by Mr. Jeandheur has gained for him an enviable reputation, and the prices quoted in his new price list are very reasonable. The price list can be had upon application by any in the trade. Mr. Jeandheur pays special attention to mail orders.

—The Middletown Plate Company's new showrooms at 22 John street, are a great improvement over the over-crowded place they formerly occupied opposite. The new place is now in working order, and the display of goods is arranged in excellent taste. A great many new design in plated ware are shown. Attention is called to their advertisement this month, which contains a new illustration.

—The William Rogers Manufacturing Company have issued a new price list and catalogue, which can be had on application by dealers. This firm now put up all their ladles, pie, cake, fish and crumb-knives, berry-spoons, salad-forks, fruit-knives, nickel and steel nut-picks, etc., in satin lined cases without extra charge. The child's sets, shown pages 43 and 44 of the catalogue, can be had either on cards or in satin-lined cases at the same price. The catalogue also shows a handsome line of new hollow handle goods. Dealers in these goods will receive a pretty little trade-mark sign for use in their stores.

—Mr. R. J. Herbert has removed to 51 Nassau Street.

—The Columbus Watch Company, having closed out their entire lines of four and six size movements to Oppenheimer Bros. & Veith are at present engaged in perfecting a new six size movement constructed from a new model. It is expected that this movement will be ready for the market in August. Meanwhile, Oppenheimer Bros. & Veith, are offering the Columbus movements at low prices. This is a good opportunity to secure good four and six size watches, as they can be had in several grades, and all have the guarantee of the Columbus Watch Company.

It seems that in olden times superstitious people likened the twelve apostles to precious stones. Peter, the "Rock of the church" was represented by the Jasper. Andrew's "heavenly faith" had for its emblem the Sapphire. The Emerald was the emblem of the "pure and gentle" John. Chalcedony of the loving James; Sardonyx, of Philip; Carnelian, of the Martyr Bartholomew; the Chrysolite, of Matthias; the Beryl, of the doubting Thomas, the Topaz, of James, the younger. Chrysoprase, of the truthful Thaddeus. Amethyst, of Matthew. Hyacinth, of Simeon of Cana.

—A. G. Schwab & Bro., of Cincinnati, Ohio, have put upon the market a watch sign, which for attractiveness is certainly a novelty. An automatic arrangement in the center of the dial is revolved by the air, and the hands of the sign are kept in continual motion. The sign does not, of course, keep the correct time, but the passer by is at once struck with surprise at the sight of a big watch with its hands revolving so fast. Both sides of the sign are alike, and the hands on either side move in the proper direction. Attention is called to the illustration which appears in A. G. Schwab & Bro's. advertisement.

—The Waterbury Clock Company's office at 10 Cortlandt street, since it has undergone the recent extensive alterations, would hardly be recognized as the same place by old patrons of the company. The large show room, occupying the greater part of the store has been entirely refitted, and the goods re-arranged in a most attractive manner; The office in the rear has been enlarged, the old ceiling has been taken out; and the present ceiling is twice as high as the old one. A large skylight extending over nearly half of the ceiling lets in plenty of light and air, and the office has a very pleasant though a perfectly business like air.

—Mr. Edward Lilienthal, of New Orleans, La., died on May 3d of Bright's disease, after several months acute illness. He was born in Germany fifty-two years ago, and came to this country in 1853. During the late war he served with distinction in a noted confederate regiment, and after the war he started in the jewelry business. He had been quite successful up to the time of his recent failure, and has always had a reputation of the highest character, which was sustained even through the period of the settlement of his business affairs, for at that time his creditors made him the receiver for their benefit, which showed the confidence they retained in him. He was unmarried, and was buried by members of the societies to which he belonged.

—The *London Iron* says concerning the future of the metal tin; "The day may be yet far distant, but we would not be surprised if this metal should in the future take rank as one of the precious metals. Silver is much more widely distributed over the surface of the globe than tin is, which, in fact, is one of the metals most rarely met with in deposits of sufficient abundance to be available for metallurgical purposes. The principal sources of supply at the present time are the mines of Cornwall, Australasia and the Straits Settlements. The insignificance of other sources may be inferred from the fact that last year, notwithstanding the improved value, out of a total foreign supply of 24,076 tons, only 584 tons came from elsewhere than Australasia and the Straits Settlements. And even of that quantity 111 tons reached us from Holland and may be considered as originally emanating from the Straits Settlements."



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No. 6.

THE JEWELERS' CIRCULAR

AND

HOROLOGICAL REVIEW.

OFFICIAL REPRESENTATIVE OF THE JEWELERS' LEAGUE, THE NEW YORK JEWELERS' BOARD OF TRADE, AND THE JEWELERS' SECURITY ALLIANCE.

It is also the Recognized Exponent of Trade Interests.

A MONTHLY JOURNAL DEVOTED TO THE INTERESTS OF WATCHMAKERS, JEWELERS, SILVERSMITHS, ELECTRO-PLATE MANUFACTURERS, AND THOSE ENGAGED IN THE KINDRED BRANCHES OF ART INDUSTRY.

SUBSCRIPTION.—To all parts of the United States and Canada, \$2.00 per Annum, Postage Paid. To all Foreign Countries, \$3.00 per Annum, Prepaid.

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SETH W. HALE, Pres't,
THE JEWELERS' CIRCULAR PUBLISHING CO.,
189 BROADWAY, NEW YORK.

Advertising rates made known on application.



A full Index to Advertisements and Table of Contents will be found on Page 5 of this issue.

ONE OF the singular things in this connection is found in the fact that while all classes of business men condemn the existing political methods, and denounce the interruption they cause to industrial interests, the minute the campaign is well opened, these same men enter into it with vigor, join political clubs, take part in the processions, etc., and shout themselves hoarse in the interests of their favorite candidate. It is a strong card for the political managers to play, this corraling of the business men, and special demonstrations of merchants, manufacturers, etc., are made particular features of the campaign, first on one side and then on the other, and it not unfrequently happens that the same men will be found shouting and parading on both sides. We recall these "business mens'" demonstrations of four years ago, when gangs of hired processionists paraded first in the Democratic ranks and then with the Republicans, to swell the number of "business men" who were supposed to make up the show. It would be well if business men generally would refuse to countenance these transactions; they suffer enough in a presidential year from loss of business without being called upon to make special demonstrations and to incur special expense in the conduct of the campaign. We hope the jewelry trade will take advanced

ground upon this point this year, and refuse to countenance any demonstration that seeks to ally them as business men with either one party or the other. Of course, every man has his political preferences, but he should not let the politicians use him to the detriment of his legitimate business interests. If business men generally would refuse to take an active part in the demonstrations of a political campaign, the presidential year would soon lose its terrors for them.

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IT HAS been demonstrated in recent years, that certain of the precious stones can be imitated so closely by artificial means that the products of the laboratory can scarcely be distinguished from the natural gems. In THE CIRCULAR of last month we gave an illustration and description of the production of some artificial rubies; while the methods there described were successful in producing artificial rubies to a limited extent, the success has not yet reached a point where it promises to be of commercial value. The cost of producing indifferent imitations of the genuine stones has been so great thus far that there is no money in it, and the matter remains an experiment, or a curious study. Possibly future experiments may result in the production of artificial stones at a cost below that of the genuine, but this does not seem probable. The artificial rubies referred to in our issue for June, are not what are known to the trade and the public as imitation stones, but they were the results of prolonged experiments on the part of scientific men to produce genuine gems by artificial means. In all ages men have sought to produce pure gold by mechanical or chemical processes, but have never succeeded in manufacturing anything better than a bogus imitation of it. Whether the natural processes by which precious gems are evolved can be so closely copied artificially that the product will have all the characteristics and value of the genuine, is extremely doubtful. While nature is extremely lavish in her gifts to the human family, there are some secrets that she has persistently kept locked up in her own bosom, and among these is the secret of making the precious metals and gems. There is, however, a large trade in imitation stones, and they are used in great quantities in the arts and trades, but they are bought and sold for their face value, as manufactured goods, not as genuine precious stones. Herein lies the difference between imitation stones and artificial stones; the first is a confessedly manufactured article that does not claim to be the equal of the thing imitated, while artificial stones are claimed to be genuine stones artificially produced, containing all the elements that nature puts into the gems of her own production. Should any one ever succeed in manufacturing artificial gems at a low cost, it will be the death knell of the trade in precious stones and all the immense interests dependent upon it. When diamonds, rubies, sapphires, etc., are offered on the street corners by hoarse voiced hucksters, at a dime a dozen, no one will want them, and the most costly gems now in the market or in private possession will be

no more valuable than so many marbles. That day, however, is probably very distant: centuries have rolled away since precious stones were accorded their great value, and the flight of time has but added to the appreciation given them: centuries to come will probably be no more successful in finding a substitute for them.

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THE REPORT of the Treasury Department shows that in the month of April, of the present year there was imported jewelry and manufactures of gold and silver valued at \$114,388, as against \$56,224 imported in April of the preceding year. For the ten months ending April 30, the importations were valued at \$1,003,720 against \$721,439 for the corresponding period of last year. The importations of precious stones and imitations, not set, amounted for April to \$627,855, and for April last year to \$611,929, but for the ten months ending April 30, the importations were \$8,315,018, and for the corresponding period last year they were \$8,487,488. There was an increase of about \$6,000 in the value of the importations of clocks and parts of clocks in April over April of last year, but a decrease in value of between \$300 and \$400 in the ten months of the year. The value of watches and watch material imported in April was \$157,607 as against \$114,746 a year ago, while for the ten months of the present year ending April 30, the importations were valued at \$1,411,477 as against \$1,241,190 in the first ten months of last year. Our dealings with the old country, so far as the jewelry trade is concerned, is steadily on the increase. If some one would find a diamond mine in this country it would put a different face on the matter.

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IF TRADE and commerce in general has had occasion to complain of dull times for two or three months, the Wall street speculators have been complaining in a similar manner for the past two years. Indeed, it looks very much as though the occupation of the street speculators, as such, was about ended, and they will have to confine their operations to legitimate transactions. They fleeced the poor lambs too often, and sheared them so closely that they avoid the place where they lost so much wool. The Wall street operators—called operators instead of gamblers by courtesy—have had sorry picking for two years, and their little tricks that were formerly so enticing, no longer serve as tempting bait to outsiders. Men engaged in regular business seem to avoid these speculators as sedulously as they formerly used to seek men, and far less capital employed in legitimate business enterprise is imperiled by the hazards of Wall street. This is good for business, but is rather hard on Wall street, which has never known such a prolonged season of dulness. Many operators have been forced to seek other employment because of the scarcity of lambs that come to the slaughter.

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THE MONTH of May was, unquestionably, the dullest that has been known in business circles for several years. Not alone did the jewelry trade complain, but all kinds of business suffered similarly from a dearth of orders. Travelers on the road scarcely paid expenses, and numerous orders recalling them were sent out, it being deemed better to keep them at home than to attempt to push business under such discouraging circumstances. June followed with a slight improvement, but business men in general have abandoned the hope of a large trade during the summer, and will patiently await the coming of September for the commencement of the fall trade. The jewelry business, has, of course, suffered from the dearth correspondingly will all other lines of business, but, judging from the reports in the daily and trade papers, it has suffered no more than the other industries. The late, cold, backward spring,

with its incessant rains and its floods, cyclones, etc., delaying the work usually well advanced in May, is held accountable for the exceeding dullness of the past two months. There is nothing in the general condition of the country to warrant any anticipation that there is to be a prolonged season of stagnation. The only thing that is against a liberal amount of business for the year, is the fact that this is a presidential year, when the political parties will use every exertion to keep the country in a ferment and an uproar. When men are attending political meetings, parading, torchlight processioning, and wire pulling for future offices, they strike a blow at business prosperity from which they also suffer to the extent of their business interests. But it is not the business men who are responsible for the confusion of a political campaign; on the contrary, it is the politicians, the "heelers," the "strikers," and the office seekers who keep up the turmoil; the men who have no legitimate business to engage their attention, but who look to the excitement of a political campaign to furnish them something to do, with a possible chance for official recognition. It is to be hoped that the day is not distant when the presidential term will be extended to ten years, and this upheaval every four years avoided.

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ON THE corner of John street and Broadway there is being erected at the present time a large nine story building which, rumor says, is to be finished off especially for jewelers' occupancy. The site is rather narrow on Broadway, but deep on John street. Should the owner succeed in constructing a building suitable for the uses of the jewelers, it will be a blessing to the trade. During a number of years past, there have been efforts made to induce the trade to abandon its present center, Maiden Lane, John street, and the immediate vicinity, and to concentrate in some more desirable locality. There was quite a higeria at one time, and many prominent houses removed up town, but experience showed, after a few years, that the up town locations were excellent for the retail dealers, but that the wholesale trade would still come down to Maiden Lane, to a very great extent. As many of the old houses refused to change their location, some of those who had taken flight came back again; some of them still remain in the neighborhood of Union Square, but the bulk of the manufacturing and wholesale trade is still down town. The trade seems to be wedded to this locality, and to prefer the old, incommodious, illy-lighted and badly-ventilated buildings in the Lane and adjoining streets to the better quarters that are offered in other localities. There are probably no tenants in New York who pay higher rents proportionately than the jewelers, and none that are worse off in the matter of accommodations. The owners of the buildings have, apparently, resolved to make capital out of the fact that the jewelers are an immovable body, bound to "flock by themselves" regardless of the cost, and charge them accordingly. Their ricketty old buildings remain in the same condition year in and year out, and if a tenant wants any changes made, he must make them at his own expense. It is good, therefore, to see that there is a prospect for the erection of a commodious and elegant structure in this locality that the jewelers have declared to be their own. Probably others will follow at no distant time, and eventually the jewelry trade will be as well housed as are the representatives of other great industries. Every dealer in the street is entitled to much better accommodations for the rent he is paying than he now gets; a half dozen or so fine modern structures, containing all the improvements now demanded by the requirements of business, would be a great improvement to this neighborhood.

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THE SEASON for expositions, of a more or less national and international character is approaching. We are in receipt of numerous circulars and prospectuses announcing the programmes of these various exhibitions, with requests that we notice them and call

the attention of the jewelry trade to the advantages to be derived from the display of goods on these festive occasions. A few years ago most of these displays would have been called town or county fairs, but in these days of superlative nomenclature they have become expositions. Ambitious cities vie with each other in running into debt for the erection of costly and spacious structures in which to hold these exhibitions, lasting from one to two months, and then make lavish promises to induce outsiders to attend and help to pay the bills. The city expects to make a profit by the amounts these outsiders will spend with the local hotels, beer shops, and tradesmen. For the local dealers in the immediate vicinity of these expositions, it is doubtless good for them to exhibit their goods and productions, for by so doing they are likely to work up a considerable local interest in their enterprises, but we fail to see the advantages that persons from a distance are likely to reap from exhibiting at these local shows. Experience has shown that it is a costly thing to do, and that the benefits of it accrue to the local dealers to a great extent. It is an expensive way of advertising, which should be borne by those dealers who subsequently reap the profit. The crowds that visit these alleged expositions are not usually composed of large buyers, and their purchases have a decidedly retail favor. When dealers require goods they generally know where to find them, and do not go to expositions to find out who are the manufacturers in their lines. From such international expositions as that at Philadelphia, where nation exhibits against nation, and the products of the world, natural and mechanical, are displayed, much is to be learned, and these are worthy of support from all classes. The Philadelphia exposition did more for the development of art study and artistic work in certain lines than any thing that had ever been done or written before. Employers sent their workmen there and paid all their expenses that they might study the productions of the workmen of other countries, and the jewelry trade can now point to some of its best work that grew out of the knowledge obtained at Philadelphia by their workmen. There is a prospect that we shall have an international exposition in this country on a more extended scale in 1892, in commemoration of the discovery of America by Columbus, and we recommend to the trade to save themselves up for that, and not fritter away their time and means in exhibiting to the dozen or more local shows that are now beseeching them to come and help build up their local dealers. At the same time, it would be well for local dealers, each in his own place, to make as fine an exhibit in his local exposition as possible, for it is an excellent way to call attention to his stock and to his individual enterprise.

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WATCHES are being worn abroad in all sorts of forms by ladies and under all conditions. Small watches are set in the flap of the large portmonnaies they carry in the street, and some are enclosed therein in a frame that is studded with precious stones. Diminutive watches appear in finger rings, and also in brooches, and the fashion for wearing them in this manner is spreading. Anything that constitutes an attractive novelty is sure to captivate the heart of the average woman, hence have we jewelers.

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IN RESPONSE to the query, "Who is the successful retailer?" an old veteran in the business responds: "Well he is the man, who is in advance of his customers and his more slothful neighbor. He is the man who reads his trade paper and keeps himself posted on any new goods that may come up in the market. He is the man whose shelves are weighed down with everything that his custom demands regardless of his own individual likes and dislikes; who never allows his prejudices to overcome his business principles and

who believes in attending to his own business first and other people's during his spare time. He is also the man who anticipates the wants of his customers by keeping himself posted upon marketable goods and obtaining these goods even before there is a demand for them. Combined with these traits must be courtesy and an accommodating spirit and the shekels will drop in that man's treasury every time." Here are some of the rules he lays down for the guidance of dealers: "Reduce the old stock—sell off the old goods cheap. Stock up with new novelties. Push trade with energy. Advertise judiciously. Be careful in giving credit. Run a cash business, or as near it as possible. Cash customers can be held by fair, generous and courteous treatment. Credit customers sometimes quit when their bills grow large. Cash customers never leave unpaid bills. When your stock gets low, use the telegraph to order goods rather than lose a customer. It is not the amount of goods sold, but the profit on them that makes one grow wealthy."

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AT THE time THE CIRCULAR reaches its readers, the celebration of the ever glorious Fourth of July will be virtually entered upon, but at the present writing the indications do not point to a very elaborate recognition of the day. But there will, of course be the usual amount of gunpowder burned, with fireworks accompaniments, the customary number of accidents and, if we escape with a moderate amount of property burnings, we can count ourselves fortunate. Last Fourth of July there were ninety-four fires in the twenty-four hours in this city, and property to a great amount was burned, the fires originating directly with places where fireworks were sold. As a consequence, the authorities made more stringent regulations regarding the sales of fireworks, prohibiting their being kept in certain classes of shops, and, although there have been vigorous protests, the authorities have adhered to the regulations. Considering the number of lives that are sacrificed annually and the immense value of the property destroyed in consequence of this patriotic desire on the part of the masses to make a noise and burn something, it ought to be possible that a more rational manner of celebrating the anniversary of the nation's independence might be devised. So long as it is permitted, however, we can only join with others in counseling the greatest care and vigilance on the part of our readers in their observance of the day. Do not confine your vigilance simply to your own actions, but see that your premises are not endangered by the carelessness of others. In this city, the fire department is on the alert for forty-eight hours, the men not being permitted to absent themselves from the engine houses, and are thus enabled to reach a fire in its earliest moments, thereby preventing extended conflagrations. But even this vigilance will be ineffectual if their efforts are not seconded by citizens in general.

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AT THIS season manufacturers are busy perfecting novelties for the fall trade, and some of them promise a greater variety of desirable goods for the holidays than ever before. This is saying a good deal, and they will have to display a great amount of ingenuity in order to excel their previous efforts. Now is a good time for dealers generally to look over their stocks with a view to weeding out such goods as have proved to be unsalable, and supplying their places with others of later and more attractive designs. Every merchant must expect to accumulate a certain amount of undesirable stock, and it is simply folly for him to continue carrying it, for it is not only dead weight, but it serves to detract from the salability of goods that are desirable. Every spring we see the merchants of this city advertising freely their overstock of winter goods at greatly reduced prices,

and some go so far as to send to the auction rooms everything that remains of their unseasonable goods. This gives them room to put in and properly display their summer attractions. Every recurring season these merchants pursue this course, refusing to carry over from one season to another the stock appertaining to such season. Fashions are continually changing, and manufacturers are constantly introducing new styles of goods, so that dry goods merchants who attempt to sell last years styles find their customers seeking other and more enterprising stores. The jewelers have the same experiences, only to a lesser degree. Styles change, new designs are continually being introduced in every line pertaining to their business, and the dealer who attempts to palm off old stock as new goods will be readily detected, and his prestige for enterprise be lost. Now is the time to find out what fall styles are going to be introduced, and to place orders for them. The man who delays his orders till the last day in the afternoon, is generally the one who is loudest in his complaints of dull times. It should be his aim to contribute his share towards making business good, and to do this he must lead off in the procession, and by a display of energy and push, lead the public taste instead of trying to follow it. A stern chase is always a long one, so say old sailors, and it is quite as true of general business as in marine matters.

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AN INDIAN diamond, weighing $24\frac{1}{2}$ karats, has been on exhibition in London for some time. It is called the Gor-do-Norr, and is reported to be unsurpassed for purity and brilliancy of luster. The stone was found at Wadjra Karar, in the Madras residency, and in its natural state weighed 67 karats. Experts at once pronounced it a most wonderful stone, and the property on which it was found was purchased, and a company is being formed in London to work it. The natives have long regarded this section as a prolific diamond field, but their attempts to prospect it have been confined to surface examinations, as they have not the requisite machinery to do systematic mining. Wadjra Karar is the name of a village, and the same signifies diamond village. Great anticipations are formed on this discovery, and the Englishmen are determined to work the field thoroughly and scientifically. The *Horological Review* of London, commenting on the subject, says: "In olden times India undoubtedly supplied the world with the finest and whitest diamonds. The Brazilian discoveries never surpassed them in the peculiar characteristics of the gem, while the great majority of the South African supplies are comparatively soft, lusterless, tinted, and seldom have that blue-white fire which nearly doubles the market value of the Indian stones. The supply of Indian diamonds, however, has never equalled the demand, for many reasons: the native princes were at all times eager buyers; the general demand so enormously increased; while the output was curtailed by the ignorance and superstition of the natives. The native will search near the surface for diamonds during the rains or immediately afterwards, because he is credibly informed that they come down with the deluge from the heavens; but if he has the hardihood to sink a shaft, the water—the great necessity for diamond washing—effectually bars his progress downwards and frustrates his search, owing to the want by him of proper pumping machinery. Of the important historical diamonds—the "Nizam," "Great Mogul," "Great Table," "Regent," "Austrian Yellow," "Koh-i-nor," as well as the "Gor-do-norr," come from India. Yet, just as the gold mines at Mysore were utterly neglected until recently, so have the diamond fields been left to the simple and rudimentary work of the natives, though now, thanks to the prescience of Mr. R. G. Orr and one or two other enterprising men, the application of English enterprise and the resources of modern scientific machinery will bring the hidden treasures to light."

A Tribute to the Departed.



IT IS NOT our practice to say much regarding our contemporaries. We attend quietly to our own business, and have our hands full without worrying about others. But the following paragraph from *The Manufacturing Jeweler*, relative to deceased publications, we quote for the purpose of adding a few words:

"Since our last issue two jewelry publications have quietly dropped out of the race. One was the *Jewelry News*, which had completed a little more than a year's existence. The *Jewelry News* was begun wrong, as the projectors discovered within three months of its birth. No journal can afford to begin with the 'big I and little you' style without it has some brains, many friends, and considerable money back of it. The projectors had very little of the latter, and the bubble speedily burst. As soon as the *News* drifted into the hands of men unfamiliar with trade journalism the end soon came. The *Mainspring*, a very modest and handsome publication, died after three months existence. Its sponsors soon discovered that their field was absolutely filled, and they had not the acquaintance with the trade necessary to make a place for themselves. Let the departed rest in peace. There are indications pointing to one more jewelry journal funeral before long, unless a decided improvement sets in. Canvassers on jewelry publications frequently run up against the argument: 'There are too many of these trade journals,' and yet these very men, in the goodness of their hearts, will give aid and comfort to the first new scheme which comes along with a good fellow at the head of it and a plausible story. It is idle to say that there are too many trade journals as it would be to say there are too many jewelers. Anybody has the right to start a jewelry shop or a trade paper. And the fittest will survive."

The failure of the *Jewelry News* illustrates a point we have heretofore made, namely, that subordinates too frequently imagine that they embody in their own persons the business they are employed to represent, and swelling with self consciousness, they think they have only to set up for themselves to take all the patronage away from their former employers and gobble it for themselves. The ambitious youth who started the *Jewelry News* was formerly a boy in the employ of THE CIRCULAR and was advanced from time to time till he was one of our canvassers for business. In this capacity he received an income that he could not have equalled in any trade and in no other occupation. But he outgrew his clothing, and thought that THE CIRCULAR did not afford scope enough for his genius. So, without capital, without journalistic training, with no acquaintance except such as his connection with THE CIRCULAR had brought him, he launched the *Jewelry News* to "fill a long felt want," as he asserted in his self laudatory salutatory. He obtained a few contracts for advertising, but was forced to hypothecate these to the printer in order to get out his first number. He soon ascertained that printers' bills have to be paid and that the printing of a paper is a costly matter. His income having ceased, he soon became involved and was forced out of the concern by others who had money at stake in it. Not having the established reputation of THE CIRCULAR behind him, this young man found difficulty in obtaining advertisements, and the concern was in the habit of inserting them without orders and then sending bills for them in the hope that the dealers would pay them rather than have a quarrel. The concern dragged out a precarious existence for a short time and then quietly succumbed to the inevitable, furnishing another example of vaulting ambition that o'er leaped itself. It also demonstrated the fact that a successful business cannot be built up on a basis of detraction and misrepresentation.

It has not unfrequently occurred in the jewelry business that a successful salesman has imagined that the success of the house he represented was dependent upon his personality, and that he had only to set up for himself to take with him all the customers to whom he had sold goods. He forgot that he was simply the agent for another, and that it was the other who furnished him the means to accomplish his own success; that it was the established reputation of the house that made him successful as a salesman. As such he had no responsi-

bility, but simply carried out instructions. Those who gave him orders relied upon the house, not him, for their faithful execution. Customers were not to be diverted from an established house that had always treated them fairly to follow the blind fortunes of a casual acquaintance whose methods were untried and whose practices in his own behalf were unknown.

We never knew anything about the *Mainspring*, but presume its projectors thought the jewelry trade offered an unlimited field from which to draw advertising patronage, and so, without ever having done anything to promote the interests of that industry, and not being any way particularly identified with it, they sought to work it for their own advantage. What they gave in return for the very limited patronage they received, the files of the paper, if any exist, will show. Apropos of the timely taking off of the papers named we may appropriately quote the well known epitaph:

"If so soon I was to be done for,
I wonder what the devil I was begun for."

The publication of a trade journal that is worthy the support of the industry it claims to represent, is both a difficult and costly undertaking. The field is limited, and the profits still more so. The successful trade journals are those that give a *quid pro quo* for every dollar they receive, and lay aside all hopes of extravagant profits.

Problems in the Detached Lever Escapement.

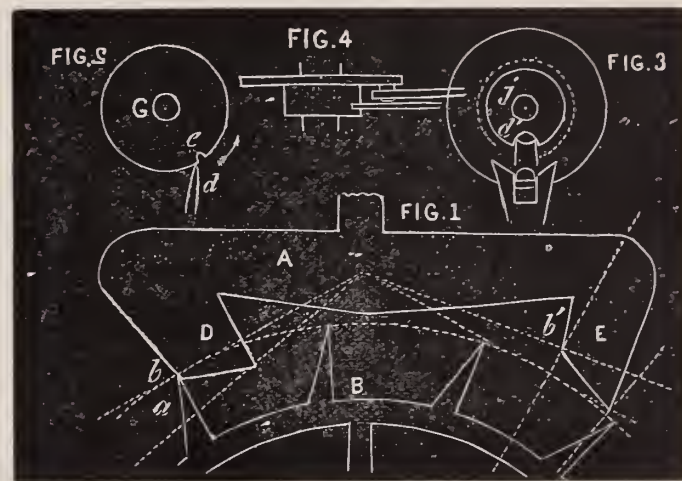
BY DETENT.



WHILE IT IS desirable to hold fast to that which is good, still, it is well to give scope to ideas of improvement by encouraging what might almost be looked upon as an innovation. This series of articles has heretofore only spoke at any length of the kinds of lever escapement in general use, viz., the ratchet tooth and the club tooth; but in the present paper it is proposed to digress a little, and speak of modifications of the lever escapement which have been proposed and executed with more or less success. The form of lever escapement most marked in its departure is the one called the

repellent, or anti-detached lever escapement. This escapement has again quite recently been applied to some fine watches with very good results. I will first describe the peculiarities of this escapement and then speak of its merits and detractors. This form of the lever escapement has no locking faces in the sense the term is usually applied, as the face on which the tooth rests has no lock, and if it was not for the guard point on the end of the lever which rests against the roller, the lever would vibrate back and forth constantly like the verge to a recoiling beat clock when the pendulum is removed. The teeth for this kind of an escapement are usually of the ratchet tooth form, only not so much under cut. The great objection urged against this form of escapement is the friction of the guard point resting constantly on the roller, but whether this is as much of an objection as those who present it would have us believe is questionable, as is witnessed by the duplex escapement, which, if it was not for its fragility so liable to accidents, would stand a dangerous rival to the lever, but clumsy workmen and the danger of breaking a balance staff have operated against it, until the loud talk-

ing Waterbury revived it. The repellent lever has an advantage in banking, as no watch butcher can open the banking pins "to free the escapement," and again it can be scraped closer, that is, a ratchet tooth escapement of this type can be given $10\frac{1}{2}$ degrees pallet action against 10 of the ordinary ratchet tooth escapement with a lock. There has been some improvements added since its inventor, Mr. J. A. Cole, first introduced it. Those improvements are principally in the roller and in diminishing the pallet action. In its original form this escapement had a pointed lever which acted on a slot in a jeweled roller. Newer forms of this escapement have forks similar to those in ordinary use and the guard point is double—in fact, like the fork to the older style of levers which had what was termed with the trade, London crank rollers. This diminishes the friction a good deal and also takes away the liability to set in the pocket from having a very large angle of motion to the roller action (40 to 50 degrees). In the cut the action is shown as 10 degrees pallet action, but the most successful of these escapements only give $8\frac{1}{2}$ degrees of pallet action, with one degree of hold on the resting face (we can hardly call it locking face); this is amply secure, as no side shake can influence the hold or resting place of the tooth on the pallet. At fig. 1 is given a cut of this kind of escapement, *A* representing the pallets and *B* the scape wheel. It will be seen instantly that the locking faces at *b* are repellent, and instead of drawing the pallets toward the scape wheel, as is the case with the ordinary pallets, the



action is to throw the pallet away and allow another tooth to escape. This action is prevented by the fork which rests against the roller. To understand this better we will refer to fig. 2, where *G* represents the roller and *d* the end of the lever. We will suppose the pallet *E* has just escaped and the point of the lever *d* has also just left notch *e* in the roller *G*; the impetus of the balance carries the roller around in the direction of the arrow, the point of the lever *d* resting on and slightly pressing against the roller from the repellent action of the resting plane *b*; as soon as the balance has completed its excursion in the direction of the arrow it will be forced back by the action of the hair spring, and when the roller returns, of course, the point *d* will fall into the notch *e*, and as soon as a tooth begins to act on the impulse plane of the pallet *D*, the point of the lever *d* will act to impel the balance forward for another vibration in the opposite direction. We can readily see that all the loss of power in this escapement is the friction of *d* on *G*; as an offset to this we save one degree of friction on the locking faces, and get one-half a degree more impulse action and also save in direct action. To reduce the friction the form of roller action is adopted as shown in fig. 3. In this the end of the lever is fitted with a fork, as in the ordinary lever, with a banking roller underneath. The guard point of the roller is made wider, as this aids in reducing the diameter of the roller against which the guard point *d* rests. What I mean by wider in relation to the guard point will be understood by inspecting fig. 3, where the guard point is shown at *d'*. Now, if this was only a thin point like *d'*, fig. 2, the roller *j*, fig. 3, would have to be the size of the dotted line; to hold the pallets on the resting plane the roller *j*

should be a jewel, but it need not be more than $\frac{61}{1000}$ of an inch in diameter for an 18 size movement if the point of *d* is of the proper width. A side view of fig. 3 is given at fig. 4; it is usual to make the angle of the locking face of a pallet 12 degrees as compared to a radial line to secure a safe lock, and in the repellent the angle of the resting face is made 12 degrees to a radial line, so that there is just force enough exerted on the pallet to keep the guard point pressed against the roller *j*. The teeth on their faces are on radial lines which frees the back of the teeth from the pallet. The fork and pallets of such an escapement should be very carefully poised to avoid unequal frictions. This escapement is especially adapted for studying isochronal adjustment. Many persons would imagine the constant friction of *d* on the roller *j* would be inimical to isochronism, but such seems not to be the case, especially in watches having a going barrel, where there is more power applied when first wound than when run down. The cylinder and duplex escapements affording similar results, the extra power of a fully wound watch of these kinds seeming to afford a corresponding exalted friction, one seeming to compensate and offset the other. The guard point should be of gold or aluminum bronze so as to need no oil. Steel points or actions even against perfectly polished jewels will cut except they are oiled. A few words here in addition to what was said a few lines back, and also spoken of in the May number of this journal in regard to adjusting. There has recently been a good deal of discussion in the British horological journals about the effect the escapement has on isochronal adjustment. I would propose to those parties who ignore the influence of the escapement on this adjustment to try a very simple experiment and easily adjusted. Take any of the finer grades of American watches and test for isochronism by comparison with a close running regulator or a box chronometer, and after finding the rate (leave the watch during all the tests in one position, say, dial up,) then open the banking screws a little, or open only one, so as to increase the lock and note the change, for it will change the rate. Some readers may cavil and say let the bankings alone, as they were all right. I would answer *perhaps*. We all know the adjustable bankings of American watches were introduced to compensate for imperfections in the escapement. At any rate the experiment will cost nothing. A good deal of adjusting at any rate is the skill to make one error compensate for another. Even the atmospheric resistance is a common resort in isochronal adjustments by changing from brass to gold screws. It is not necessary to open the bankings enough to seriously disturb the healthy action of the escapement to realize an influence.



[FROM OUR SPECIAL CORRESPONDENT.]

PARIS, June 10, 1888.

"The lovely month of May," so splendidly sung in all languages, had for many springs proved somewhat unworthy of the praises bestowed on its splendors by over-exulting poets. Although we have in that respect, been more fortunate this year, yet more than once our Parisian ladies, mothers and daughters, when gracefully seated on a bright afternoon in picturesque clusters on the iron chairs of the Champs Elysées, and trying the effect of new fashion robes and bonnets, have seen the beautiful breeze they smilingly enjoyed suddenly turn into a sharp wind, and heavy clouds quickly masking the sun, replace by a pouring rain the sparkling showers of sun rays. You could see then in a second all the umbrellas shoot up and stretch round. It is like a spontaneous growth of innumerable dark mush-

rooms underneath which disappear the most delicate costumes of the season. To leave the seats, to cross on tiptoe the gradually soaking avenue and to enter the Palais de l'Industrie is, evidently in that case, the best thing to do. Inasmuch as the salon is open and the yearly exhibition of fine arts must be seen before the hot weather has rendered Paris unbearable. Let us, in consequence, go through the tourniquet.

I thoroughly understand that you would not allow me to entertain you about paintings or statues, although it is well known that engravers and chasers for our trade have found some of their happiest hits in carefully studying the best works of that kind. Therefore, we need not go up stairs and pass through that enfilade of rooms which contain the 2,586 paintings, in spite of being sure that some of them are really superior; that Roll has abandoned those leaden greys he was so fond of and given to a milkmaid, exhibited by him this year, a beautiful and clear complexion; that Cabanel, Bouguereau, Benjamin Constant, Henner, Carolus Duran, etc., are still up to the mark. We enter the large hall in which the statues are spread. We turn to the right and pass by the plaster, marble and bronze, rising to life before us in all directions, and come at last to the secluded part where are to be seen, by people who know their way about, the delicate works of some of the most refined artists. Here is Léon Bonnat's portrait, side face, an onyx cameo by H. François. What a life in those features! You could almost see a spark in the eye. Beautifully treated is Vernier's Saint Georges, after Albert Dürer, a gold medal with *repercé* background. This dainty piece belongs to Messrs. Bapst and Falize, as do also two tiny gold counters, one of them showing an image of "Temperance," and the other one a group called "La Parque et l'Amour" by the same. Georges Lemaire's "Flore et Zéphir," a sardonyx cameo, is of a good design, but this amiable group is evidently of too great a relief, and the god who personifies the soft breezes seems a trifle too tall for it to be consistent with his aerial character. M. Déloye's share in the exhibition is rather an important one, comprising fifty medals, all in bronze save one in gold. He has given us this year many proofs of his perfect understanding of the most diverse styles. His "Hippocrates," with his grave and motionless visage, is undoubtedly a work belonging to the old Greek time; Carrier Beuleze's portrait, whose expression is speaking, has the ever-stirring countenance of that original French sculptor. Above all, M. Déloye shows his supreme delicacy of touch in dealing with the beauty and grace of nymphs, and earthly as well as celestial goddesses. His "Princess of Wales" large size gold medal, is the most striking instance of that wonderfully refined workmanship. The lovely profile of the princess has that serene and yet softened dignity so thoroughly sympathetic in the original. The whole work is so ethereal, treated with so light a hand, that the lines seem to have lost the bluntness usual to medals through the ever smoothing caresses of time.

The three bas-reliefs in silver repoussé of the late Morel Ladeuil, are all as worthy of notice as could be expected. His "Good Samaritan" gives at a glance the intended impression, altogether refreshing and comforting. "Amor Patriæ" is a remarkable allegory where the idea of dryness so easily attached to that kind of subjects is at once dispelled. Nothing can be more charming to look at than the third composition, "Time Scattering the Hours." The handsome old man, whose features are expressive of energy tempered by forbearance, is sitting on a cloud, with displayed wings. He holds his scythe upside down with his two hands, and gently repels with the back of the blade one of those chubby and Cupid-like little imps who are playfully flying around him.

Was it the recollection of that merry scene which made the silver-smiths appear so lively on that bright Thursday morning, as they jumped into the train going to Versailles? Faithful to their old custom, the Société des Orfèvres had left Paris early on the Ascension, to spend the day together in one of the most interesting places within a short distance from the capital. In rolling on that line which is supposed to take you right away from the Parisian buzz, you

merely seem to turn round the town like a satellite round a planet, and for a long time you can see the Arch, the glittering dome of the Invalides, the Trocadero palace, never diminishing in size, as though you could not possibly expect ever to lose sight of them. In seeing the Eiffel tower, one of the intended wonders of next year's universal exhibition, spreading upwards its elaborate groundwork, a facetious silversmith said, with a comical sigh: "We are always grumbling at the fall of silver; why did we not petition to obtain that yonder tower might be made with our metal instead of iron, then we should all witness a gradual rise of silver."

In leaving the train they marched in groups towards the Hotel des Réservoirs, where a long table was prepared for them in the large dining room, with its old-fashioned windows opening on the stately park, opposite the Bassin de Neptune. That meeting à la fourchette was of the most convivial character. Dessert became, as usual, the signal for the expected speeches. M. Veyrat, the President, started it, in drinking the health of M. Boucheron, who had accepted to represent, at the silversmiths' party, the Jewelers' Chambre Syndicale. In answer to the palatable compliments addressed to him, the Palais Royal's magnate expressed an unlimited admiration for the perfect concord reigning among the silverwares' manufacturers. He should have been very glad to see the large body who had him as a leader follow that good example. Then was proposed, among the cheers, the health of M. Tonnellier, actually 76 years old, who retired in 1882, after having presided over the Société des Orfèvres for more than forty years; and touching words were addressed to the memory of M. Granvigne, who had replaced him, and met, shortly afterwards, with an untimely death. The usual programme, consisting of driving, riding and rambling, was then gone through, and after another appeal to the victuals and wines, they all rolled back to Paris in high spirits.

Among the recent weddings witnessed in Paris, the most brilliant was undoubtedly that of the Duke Decazes with Mlle. Singer, daughter of the Duchess de Camposelice. The church of St. Pierre de Chaillot was crowded on that occasion with the very flower of the nobility, foremost among whom were to be seen H. M. the ex-Queen Isabelle, the Prince and Princess de Saxe-Coburg, the Duke de Chartres, the Princess de Hohenloe and her daughter, the Count and Countess de Pourtalès, etc. After the religious service the usual reception took place at the Hotel de Camposelice, Avenue Kleber. According to the custom, the presents, arranged in capacious glass cases, were exhibited in the middle of the hall. The most striking were a massive silver inkstand bearing the blue escutcheon with the three gold fleur-de-lys, given by the Count de Paris; a lovely fan from the Duke de Chartres; a ducal coronet made of diamonds from the Countess Lowenthal; a splendid pearl necklace from the bridegroom; another from M. and Mme. André; a diamond crescent from the Marquis de Beauvoir; an old bonbon box from the Baroness Decazes-Stackelberg; and a beautifully chased silver box from M. Brulatour, who has been a secretary at the U. S. embassy in Paris, and is an intimate friend of both families.

I wish I could, with a few magic words, manage to bring before your eyes all the delicate works of art on view at the Hotel de Chimay. It is a gathering of the most remarkable collection of valuable relics belonging to the 17th and 18th centuries, sent there by their owners for the benefit to be derived from the exhibition to increase the fund of the Night Refuges' Society. I must, for the present, be contented with telling you that the clocks, the watches and the silver plate alone would make the pride of any museum in the world. I cannot help mentioning Louis XVI.'s snuff box in Sèvres porcelain, adorned with 16 medallions, being the portraits of the royal family. It was found on the unfortunate king's table on the famous 10th of August, and disappeared with all the plunder from the desolate Tuilleries. Anonymously returned during the Restoration to Mme. la Dauphine, it belongs now to the Count des Cars.

Magnificent are those last balls of the season—the Countess

Maurice de Fleury's, Mme. André's, etc., and how spirited the crowning dances. What a graceful swarm of fairy-like ladies, accompanied by swift-footed gentlemen, all bent upon conquering those lovely cotillon's accessories; bewitching fans, elegant canes with worked gold tops, tempting sunshades with silver repoussé handles, pearl headed pins, pretty bracelets made of gold and platina tastefully interwoven, card cases ornamented with a tiny watch, thistles made of emeralds to be worn on the hair or at the corsage, monkeys whose body is a gathering of brilliants, the head in oxidized silver, as well as the hands and feet, resting on a leafless rugged bough of a dead gold, etc.

In coming home from the opera on a Friday night, Mme. Henri Schneider noticed the absence of a Mazarin she had worn as a brooch, a diamond worth 170,000 francs. Happily found by a stoker, who saw it glittering between the folds of the carpet as he was passing through the Rotonde des Abonnés, it was immediately restored to the loser who, strange to say, found it very difficult to bring the man to accept 1,000 francs.

A momentary indifference on the part of the public prevented the sale of Mme. André's jewels, on the 24th of May, to raise above 388,940 francs.

Business, greatly shaken by the discovery of forged 500 franc bank notes, has completely recovered, thanks to the Grand Prix.

JASEUR.

Silver Residues.



HERE ARE MANY jewelers and photographers who take very little care to turn to proper account the residues and wash waters of their establishments, and though few will be found who entirely neglect the recovery of the silver from their waste solution, there are cases where, partly through ignorance, partly from indolence, the silver residues are allowed to pass down the sink. And yet the work of recovering the silver is so simple and easy, that we can only wonder how any one whose vocation must have made him familiar with chemical manipulations can wish to evade it. Generally the residue, in the shape of precipitated chloride, is sold to the dealer, and there can be no objection to

this method if the precipitate has been separated in a pure state, for the honest dealer can then at once pronounce on its value. But if, as is so often the case, the precipitate consists of a wet and shiny mass of silver chloride, mixed with the dregs of the developing and fixing solutions, and often containing bits of paper and other off-scourings of the laboratory, how is it possible for the dealer to form an idea of the value of the pure silver it contains? The separation of such a mixture costs time and money and must be taken into account. Cleanliness and care are therefore of the greatest importance in any process for collecting the residues. For the reduction of the precipitates to metallic silver, the only reliable method is that by fusion. Reduction in the wet way can only be employed in the case of the chloride, and if a special galvanic apparatus is not used, the silver thus obtained is likely to contain impurities, especially zinc; hence it is preferable to resort in every case to fusion. For this process a tolerably large crucible must be used, and the reducing agent must be added in small quantities at intervals, waiting on each occasion until the reaction, which may be recognized by the mass frothing up, is complete. Any ordinary stove in which coke is burnt can be employed for this operation; when it is finished, the

crucible, after being allowed to grow cold, is broken, and the metallic silver will be found at the bottom in the form of a button.

So far the manipulation of the silver residues presents no material difficulties, but the subsequent conversion of the metallic silver into the nitrate, especially the operations of evaporating the nitrate solution and the fusion of the resulting salt, are among the most disagreeable proceedings which the photographer has to undertake. The fumes of nitric acid which are given off during the evaporation of silver, and, spreading to a great distance, they cover all articles of furniture or other objects in the room with a number of small black spots. When the operator has adopted the bad habit of using his dark room as a laboratory, this visitation may produce incalculable mischief. After all, instead of the accustomed pure white silver nitrate, the operator will perhaps find he has a nasty dark mass which has an acid reaction and contains silver nitrite, the source of innumerable failures in the negative process. If, on the other hand, the silver nitrate be allowed to crystallize out without coming to the fusing point, a purer product will be obtained; but for an unpracticed chemist it is difficult to free the crystals completely from the mother liquor, much of the silver nitrate remaining in the latter, so that, after all, fusion has to be resorted to. For these reasons it is in every way better for the operator who is not provided with all the convenience of a well furnished chemical laboratory, to confine himself to the production of metallic silver, which, as above explained, is not a difficult process; he will get a good price from the dealer, and is quit of the troublesome and anxious operation of reducing the metallic silver to the nitrate.

A point of material importance in this working up of the silver residues is the financial question, inasmuch as the profit is greater, the greater the quantity of material one has to deal with. Now, in the production of silver nitrate upon a large scale, it would be much too costly for the manufacturer to use fine silver only, as well as much too difficult to get this substance in sufficiently large quantities; he is compelled to have recourse to ordinary standard silver containing a certain portion of alloy. For the operator who has not the necessary convenience and skill, the production of pure silver nitrate from metallic silver alloyed with copper is a work of great difficulty and troublesomeness, and not by any means worth his while. The relation of the price of fine silver to that of the nitrate varies, of course, with the market, but, as a general rule, is in the proportion of 15 to 12; assuming, therefore, that fine silver can be sold at its full value, we ought to get for each part of fine silver one and one-quarter parts of nitrate. On the other hand, by the conversion of one part of fine silver we should get 1.57 parts of nitrate; the advantage, therefore, in conversion over the exchange being about one-third of the weight of the silver employed. When large quantities can be employed this advantage becomes of importance, and if it were not for the difficulties and inconveniences alluded to, the conversion of his own silver into nitrate would be to the operator a source of considerable profit. Any method, therefore, which does away with the disagreeable operations of converting metallic silver into the nitrate by means of evaporation and fusion will be welcome to the operator. Such a method the author believes he has discovered; one by which without trouble or loss of time, a perfectly pure and faultless product can be obtained.

By this method the production of the salt in a solid form is avoided, and the silver nitrate is obtained in a solution of which the degree of concentration is known. The quantity of solution which must be produced is easily calculated; one gram of metallic silver corresponds to 1.57 grams of the nitrate, so that a solution of the salt of the degree of concentration 1 : 10 contains, for every gram of silver, 1.57 grams of nitrate and 15.7 grams of water. If the solution has a strength of 1 : 8, for every gram of silver $8 \times 1.57 = 12.6$ grams of water are required. Before commencing work, therefore, the metallic silver—obtained as chemically pure silver by the reduction process—must be weighed, and the weight in grams must then be multiplied by 1.57, and also by the proportional number of the water

in the degree of concentration, in order to get the corresponding quantity of solution. For instance, suppose that by the reduction process a button of silver of 136.4 grams weight has been obtained and that it is required to have a solution of the strength 1 : 11, the quantity of the solution to be produced will be found by multiplying $136.4 \times 1.67 \times 11$, so that the volume of solution must be made up to (nearly) 2,356 cubic centimeters by the addition of distilled water. As we have to do in this process with pure silver solution, we can, if desired, avoid the calculation by using an ordinary silver densimeter, sinking the instrument in the liquid and adding water (stirring every time) until the required degree of dilution is obtained.

Now, to get a pure solution of silver nitrate, and, above all, one free from all acid, the button of metallic silver must first be dissolved in chemically pure nitric acid, diluted with one-third or one-fourth of its volume of distilled water. This is best effected in a porcelain basin, heated over the flame of a gas burner or spirit lamp, but never allowing the solution to reach the boiling point. It is advisable to carry out the operation in the open air, on account of red nitrous acid fumes being given off, which are hurtful to the lungs. Only a small quantity of acid should be used at a time, and so on as the development of the red vapors has ceased and the silver salt shows signs of crystallizing out, the liquid should be poured off into a glass vessel. Another small quantity of acid is then poured on the silver, and, as before, transferred to the glass beaker, the operation being repeated until the silver has disappeared. By this means not only is the silver dissolved in as short a time as possible, but the solution which has been collected in the beaker contains only the least possible excess of free acid.

We must now endeavor to neutralize this free acid. This is best effected by putting a small portion (about one-fifth) of the acid solution into another glass and adding to it a solution of pure sodium carbonate, so long as a yellowish-white precipitate is formed; an excess of the carbonate is not injurious. Stir it up with a glass rod and add more of the carbonate until the solution has a decided alkaline reaction, by turning red litmus paper blue. Let the precipitate now settle, pour off the supernatant liquid and wash several times with distilled water. The precipitate is now for our purpose pure silver carbonate, for even if it contains infinitesimal quantities of sodium nitrate and carbonate, these substances will have no injurious effect on photographic operations.

Now, pour the portion of the solution that remained in the beaker on the washed precipitate; carbonic acid gas will be given off with effervescence, and the silver carbonate is dissolved in the excess of nitric acid. If the whole of the carbonate is dissolved, there has not been enough precipitated in the first part of the operation, and the same process must be repeated with another small portion of the original solution. But if the proper proportion has been observed, there will remain a little of the carbonate precipitate still suspended in the liquid; this must be re-dissolved by carefully dropping in pure nitric acid, and the last trace of excess of that acid must be again neutralized by adding sodium carbonate in very small quantities until a very slight appearance of silver carbonate is produced, which does not vanish on shaking up or stirring the solution.

The solution thus obtained, if the directions above given have been carefully followed, contains nothing but chemically pure silver nitrate; it must be brought to the requisite degree of concentration by adding water as above described, and can now be at once used, if desired, for the positive bath. For the negative bath it must be first iodized and filtered, but no filtration is required in the case of the positive bath. Should the solution be at first too weak (though this is not likely to occur) it can be strengthened by adding a few crystals of silver nitrate. When it is to be kept for future use it is better to have it in a concentrated condition, and it will be improved by keeping for some time in a warm place, so as to allow any free carbonic acid to escape, which is liable to form bubbles on glass plates and paper.

Gilding and Gold Plating.

Continued from page 26, May, 1888

REAT CARE must be taken that no mercury comes into contact with the plates of copper or platinized silver, the latter especially, as it makes them brittle and greatly diminishes the electric power. To remove mercury from copper plates the latter should be heated to redness, but with silver plates a much less heat should be applied for a longer time, and then the plates should be re-platinized. Copper plates should be frequently scoured with sand with a hard brush, and the silver plates should be re-platinized when they become light in color, which will happen after about six months' careful working. In

managing a Grove's or Bunsen's battery, it is highly important not to allow any of the nitric acid to get into contact with the zinc, because it produces strong local action and waste of that metal. As the nitric acid cannot be prevented from passing through the porous divisions, such batteries cannot be kept in continual energetic action more than a day in consequence of this circumstance. The porous cells of such batteries should be soaked in water, the water being changed twice or three times (so as to extract all the nitric acid from them) before they are used a second time; therefore, for continual use of such a battery two or three sets of such cells are necessary, some being in soak while others are in use. In charging any two liquid batteries it is best to have the liquid level, and if they be either Grove's, Bunsen's or Daniell's, the liquid in the zinc division should be rather the higher.

It is best to employ separate batteries for each different depositing liquid. Each battery should be tested before it is used; this may be done in a rough though usually sufficiently accurate way for the purpose, if the current is a strong one, by connecting one end of the battery to a file and drawing the point of the wire from the other end of the battery along its surface, by the degree of brilliancy of the sparks produced the strength of the current can be estimated. Before testing or using a battery, it is necessary to examine and see that all the points of contact of the wires, screws, etc., are clean, and that the screws hold the wires firmly; it is also advisable to see that all the cells are connected in the right order, for if only one cell is connected the opposite way, it will not only be rendered ineffective, but it will also neutralize the action of one of the others, and its negative plate will be liable to dissolve by the influence of the current from the remaining cells. Voltaic batteries should be kept in a place of moderate and uniform temperature; not where the liquids are liable to freeze or rapidly evaporate.

Regulation of Electric Power.—This is always a matter of considerable importance, especially when depositing from solutions which will not bear a great range of electric force without spoiling the quality of the deposited metal. It may be effected in a variety of ways, viz., by making alterations either in the battery, in the depositing vessel or in the wires connecting them. The electro-motive (commonly called "the intensity") of the current may be increased by adding to the number of cells in the battery, or by using cells of greater intrinsic pushing power, for instance, Grove's instead of Smee's, etc. As the electro-motive force is diminished by resistance, a diminution of resistance in any part of the circuit will increase it; this may be effected to a certain extent by making the depositing liquid hot, using electrodes or placing them nearer together. The quantity of the current may be increased by all these means, and

also by immersing the battery plates, or only one of them, deeper in the liquid. The usual method, however, for regulating the electro-motive force of the current is to alter the number of cells in the battery; and for regulating the quantity, to alter the depth of immersion of one of the battery plates (see in previous number under the heads of *Voltaic Batteries*); but sometimes the latter cannot be conveniently effected, and in that case the anode is either increased or diminished in size. As that also is usually inconvenient, a large piece of copper or brass is sometimes suspended to act as a cathode along with the article to be coated, and thus relieve it of part of the current. Galvanometers or voltmeters are very rarely employed to measure the electric currents employed in practical electro-deposition, chiefly because the want of such an instrument is not felt, and partly because the processes are too coarse for the use of electric apparatus.

Compound voltaic batteries are usually so constructed that they may be used to supply either a current of less quantity and greater electro-motive force or the reverse. By connecting a series, say of twelve cells, all in one row, with the metals alternating throughout, we obtain from the end wires a current of a quantity of one and an electro-motive force of twelve. By connecting them as a double row or series of six, the two end zincs being connected to one terminal wire and the two end coppers to the other, we get a current of a quantity of two and electro-motive force of six. By connecting them in a similar way in a treble row as a series of four, we obtain a current the quantity of which is equal to three and the electro-motive force equal to four. By arranging them in a quadruple row and a series of three, we get a quantity of four and electro-motive force of three. By placing them as a sextuple row and as a series of two, we get a quantity of six and electro-motive force of two. And finally by placing them in single row, connecting all the zincs together by one wire and all the silvers by another, they all act as one pair of twelve times the surface of a single cell, and we obtain a quantity of twelve and electro-motive force of one. To make such arrangements successfully, it is, however, necessary that all the plates be provided with suitable screws, also that all the cells be of a similar kind and equal in electro-motive force, otherwise the currents from the stronger ones will be liable to pass partly through the weaker ones instead of through the plating solution, and also perhaps damage the battery by causing some of the negative plates to be corroded; it is therefore only occasionally that batteries are so arranged, that is, not in single alternate series. The power of the current from magneto-electric machines is usually regulated by interposing a piece of thin iron wire in the circuit.

Selection of Depositing Processes.—Different articles are electro-coated by different methods; some are coated, as already stated, by simple immersion, others by means of a separate current, but an electro-plater usually employs only the latter method. For very small articles, of which there are a great number, such as buttons, hooks and eyes, pins, etc., and which require a very thin deposit, the simple immersion or wash process answers very well, being both easy of execution and cheap. But for all ordinary deposits, plating, etc., the separate current method is by far the best, because coatings of greater and of sufficient thickness of all ordinary metals may be obtained by it, and the solutions do not usually (as in the other processes) require renewal.

"Pyro-Plating."—A process termed "pyro-plating" has, during the last few years, been introduced, and is stated to be specially suited for causing a coating of gold, silver, platinum, copper, nickel, brass, bronze or aluminum bronze to adhere to metals, in cases where the metals to be plated will not readily receive a film of mercury by the ordinary "quicking" process, as with iron, steel, nickel and aluminum.

The article of iron, steel, etc., is first made perfectly clean by immersion in a boiling solution of caustic alkali, then brushed with emery, also with a steel brush in a stream of solution of washing soda; then suspended in a similar solution; next make the cathode

in a hot solution of caustic alkali, with a strong current to evolve from it plenty of hydrogen, until its surface looks "silvery," and then transferred to a special solution of silver and plated. A previously weighed metal plate, of equal amount of surface, is immersed as a cathode by its side, and weighed from hour to hour until sufficient silver has been deposited. The original article is then removed from the vat, and (after washing?) heated in a furnace to "drive" the coating of silver (or other metals, as the case may be,) into its surface, and if the article requires tempering it is quenched in water. Pyro-gilding is performed in a similar way to pyro-silvering, except that the whole of the metal is not put on at once, but in three successive layers, and heated in the furnace after each coating. The first, before being heated, looks perfect, but by the heating the gold nearly all disappears, being driven into the under metal. The second only partly disappears by the influence of the heat, and the third entirely remains. Pyro-gilding is specially recommended for coating articles of iron and steel.

Selection of Depositing Liquids.—The most important points to be observed in selecting a liquid for the separate current process, are, first, that it should yield its metal freely and in a reguline state; second, it should not decompose or deposit its dissolved metal by contact with the atmosphere or by exposure to light; third, it should not act chemically to any great extent upon the base metals or upon those to be coated; fourth, it should dissolve the anode sufficiently freely; fifth, it should possess good electrical conducting power; sixth, it should not evolve gas at the surface of the articles. The three first conditions are, I consider, indispensable, and if it fail in either, it is worthless, or nearly so, for the purpose of electro-deposition.

(To be Continued.)



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THE JEWELERS' CIRCULAR is the official paper of the Jewelers' League and has been selected for the publication of all matters of interest pertaining thereto. Letters or inquiries pertinent to its business or purposes, and which might interest the trade or inquirers, will herein be answered. Address *Jewelers' League*, Box 3,444, P. O., New York, or the office of THE CIRCULAR.

At the regular monthly meeting of the Executive Committee of the Jewelers' League, held June 1, 1888, there were present Chairman Howe, and Messrs. Greason, Bardel, Jenks and Sexton.

Eight requests for changes of beneficiaries were granted.

One application was referred for investigation, and the following applicants were accepted:

Albert Ritter, San Francisco, Cal., recommended by Joseph Davis and Joseph Nordman; George A. Allsop, Newark, N. J., recommended by F. Meerbott; Joseph J. Carr, Suspension Bridge, N.

Y., recommended by J. W. Pierce; Frank Doman, New York City, recommended by J. V. Rockwell and W. N. Jenks; Charles Edwin Meek, Fort Worth, Texas, recommended by W. R. Jackson; Wm. Morris, Darlington, Wis., recommended by A. Hirsch and W. Hirsch; Francis H. Unruh, Hague, Va., recommended by E. E. Newton.



[FROM OUR SPECIAL CORRESPONDENT]

BOSTON, June 15, 1888.

Fortune has at last begun to smile upon the retail dealers of this, the New England metropolis, and, as an immediate consequence, I am able to report a far brisker condition of local trade during the month just past, than has existed since the opening of last year's holiday season. Of course, any one who is posted will know at a glance where to look for the cause of this promising ripple of prosperity. June, that leafy and rose-scented goddess of the summer, is pre-eminently, in this home of Puritanism, the one month in all the year which Hymen loves to claim as his very own, and the number of weddings which have been recently solemnized hereabouts, has exceeded even the ordinary expectation.

This means a correspondingly brilliant social season, which has warmed the very heart-cockles of the groutiest jeweler.

Pottery and silverware have been the favorite presents, and, while the profit margin on these goods does not average, perhaps, as on some of the richer and more elaborate lines, yet the balance has been quite sufficient, in most cases, to pay sundry little vacation expenses which would otherwise have had to come out of the reserve fund.

Still it must not be supposed that this golden success is not without alloy. As one gentleman of the trade put it: "We must catch on to all the money afloat now and make the most of it, for when the fashionables get back from the mountains they won't have any."

That man has evidently been awakened to the superior advantages possessed by mine host, the landlord, for coaxing the unwilling dollar from the tourist pocket.

There's a good deal of what is known as the "traveling trade" which falls with reasonable regularity to Boston merchants. This is one point where the Hub has the advantage of New York. It is merely a transient boom, however, which lasts ordinarily from the middle of May to the end of July. Then comes a month of such depressing dullness, that most of the stores would lose nothing by being closed.

The firm of Shreve, Crump & Low have ceased to officially exist. Its successor is the Shreve, Crump & Low Company, whose incorporation dates from about the first of the present month. The capital of the new concern is \$300,000, and Benjamin Shreve is the President, with William P. Shreve, Treasurer, and the President, Treasurer, and Chas. H. Crump and Geo. D. Low, directors.

One hears but little now a-days about the big stir over the Dueber affair of some months ago. Interest in the matter has pretty generally subsided, and the retailers have, to all outward appearances, accepted the inevitable. At all events, it is noticed that when they send for a movement they are careful to send for a case at the same time—whatever that may signify. Some of them say its just to keep the curse off, but I have my own suspicions aside.

There was an informal meeting of the Jobbers' Association a week or two ago, at which, after a somewhat lengthy talk-over of the situa-

tion, it was unanimously agreed to stand by the original agreement. One of the more prominent jobbers said he didn't know how Dueber was getting along, and added, significantly: "I don't care much either. It don't seem to hurt my business any, and that's about all I am concerned about."

And so has the smoke of what promised to be a mighty conflict cleared away.

Mr. Ripley, of the Ripley-Howland Manufacturing Company, will sail for Europe July 7; he will spend several months abroad.

Mr. Bates, of the same company, has been unwell during most of this year, and has just returned from the Bermudas.

There have been a number of cases of theft from jewelers this month. S. G. Brooks, 120 Dudley street, was one of the sufferers. A thief asked to look at diamond rings, and managed to exchange a bogus ring for one worth \$75. He has not been found yet.

N. G. Wood & Son, whom I said last month would occupy McDonald's candy store at the expiration of their present lease, will be able to move into their new quarters in a few days. A number of changes are being made to accommodate them.

LEON.

Taking a Watch Down,



NOBODY WORKING largely in repairs to foreign watches, must have been struck at times by the inconsistent and ignorant manner in which they have been repaired, especially in the country. This arises in many instances, I believe, more from ignorance of the proper method to pursue than lack of will on the part of the workman; it is also, in many instances, due to a want of the necessary tools to execute the work properly. The object of this article is to show, if possible, how to avoid these inconsistencies by substituting a proper and consistent method of repair; and although I do not for a moment wish to insinuate that this is the only method that will produce good results, at least I am assured that any one exchanging their method for mine will not lose by the exchange.

By far the greater portion of foreign watches that one gets to repair in the country are of common quality, and in these cases it is very difficult to do all that is necessary to put the watch in thorough order, receive adequate remuneration and give satisfaction to the customer. As, however, there is no conjuring in the matter, the man whose work gives the best results will, in the long run, get the most patronage; and this will be the one who spares neither time nor trouble to make his work as perfect as possible. I will suppose that you have a Swiss cylinder watch to examine and repair, and proceed in the following order:

Preliminary examination before removing the movement from the case.—Wind the watch a little, if down, and try it by the ear in each of the following positions, viz., with the 6 up, 12 up, dial and cock up. By this method you can usually detect the following faults: Not in beat, wheel rubbing in cylinder passage, cylinder pivots acting on shoulders instead of their ends, incorrect fourth depth with scape pinion, balance spring rubbing, or balance cock or center wheel, etc. Next ascertain that center pinion, or, if a key winder, set square is free of glass, also bottom of case; see that teeth of barrel are *well* free of band of case when shut; it is often free (in thin gold cases) when open, but shutting the case pinches the band in and fouls the

barrel; to try it put a piece of paper between teeth and barrel and shut the case; if foul, it will mark or cut the paper.

See that the dirt cups on winding and set squares are free of dome; frequently the dome presses on the center bar and binds the center pinion, causing, if not instant stoppage, the oil to disappear and the pivots to cut. See that balance is free of case; if it is much out of flat it will probably be foul of the case or center wheel. See the fly spring, when the cover is shut, is not foul of the balance.

Put a key on set square and turn the hands to see that they are free of themselves, the dial and glass; if they do not turn truly it will proceed from either the center holes being out of upright, a bent set square or a badly fitted pinion.

Here let me impress on those who take the trouble to read this, to wit, the necessity of making a note on your board paper of all the corrections as you come to them; it is very little trouble and saves the annoyance of finding when your watch perhaps is cleaned and together, that some important item has been forgotten.

For taking the movement from the case use paper—nothing is so slovenly as working without—and lock the train, by putting a bristle through either fourth or scape wheel; remove cock and balance, being particularly careful not to strain the balance spring; put the balance and cock in tray, and remove the hands by means of two pieces of steel; take one under each side of hour hand boss, depress the ends and both hands are off at once without danger of marking or slipping; the seconds hand can be removed in the same manner without danger of bending the pivot. Remove dial and motion work, using brass plyers to take hold of the canon pinion to avoid marking it.

At this stage if I have reason to suspect that the escapement is faulty, I generally remove the balance spring from the balance, putting cylinder and cock in their places, and try the escapement. First, see that the web of scape wheel is free of cylinder passage, also that the top of tooth is free of upper plug; then with a little power on, and either a piece of paper or a cork wedge under the balance to check its motion, try if all the teeth have sufficient drop, both out and inside. If only one or two teeth are tight, the vibration of the balance is checked each time they are in action; if the balance is watched when going (with the balance spring on), it will be seen at once how the vibrations fall off when these teeth are in action. If the drop is sufficient inside, but none out, it would show a wheel too small; if the reverse, a wheel too large, *if the depth is correct*.

The method of correcting the wheel, where only some of the teeth are without the necessary freedom, is to mark with red stuff a tooth which has the proper amount of shake, remove the wheel and open a hole in a piece of thin sheet brass until this tooth will just enter; this serves as a gauge to shorten the other teeth by, being careful to operate on the *points* of the teeth, either with the ruby file or steel and oil stone dust, finishing with bell metal and red stuff lengthways and followed by a burnisher. The tooth should be rounded both ways so that a mere point is in contact with the cylinder.

The question of depth is a vexed one, some workmen setting it deep and some shallow, each having some supposed advantage to urge for their practice. Saunier, in his work, says: "To insure that the drop is no more than sufficient to secure proper action of the mechanism, it is of the first importance that the middle of a straight incline correspond to the center of the cylinder." Or, suppose a line drawn from top to point of tooth and bisected, that point should pass the center of cylinder jewel hole.

Further, he shows why this rule should not be departed from: "The older watchmakers adjusted the escapement so that the middle of a straight incline came rather beyond the center of cylinder, in order that the point of rest might be tangential. Among modern makers it is universally recognized that more is lost by making the outside drop excessive, than is gained by a slight diminution of the friction during rest."

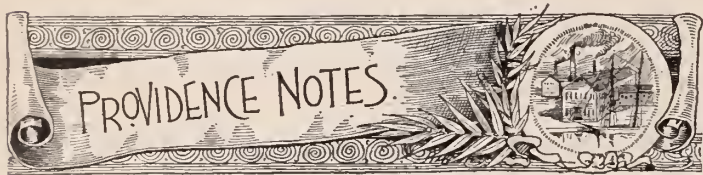
"Some watchmakers of the present day who, from insufficient

knowledge are not in a position to judge correctly as to the cause of the circumstances which they observe, have asserted that they obtained a greater regularity by making the middle of the plane fall a little short of the center of the cylinder." Before making any alterations to the escapement, it is necessary to be certain that the scape wheel is perfectly upright, as a simple alteration to this may correct one or all these faults.

After examining the escapement it will be necessary to look over all jewel holes, noting cracked ones, and, in brass, those that are too wide; trying end shakes, etc.; also to see that the passage in the scape cock, for the wheel teeth, is not too close, so as to draw off the oil, as when this is the case it is impossible to get the piece to go for any length of time.

You will now take the movement completely down—foreign workmen use a brass block, with a series of holes drilled in it, to place the screws in; it is a good plan, as if left in their respective bars or cocks they are apt to get lost. Having the piece down, you will examine all pivots to see that none are cut or bent. The barrel and its arbor and stopwork should also receive attention; it should turn with freedom and perfectly true, any want of truth in these particulars being fatal to good going.

I have now, I think, touched on most of those points that should receive attention in examining a watch previous to repair; not all, because to do that would require much space to enumerate, but sufficient, and the repairer may proceed to correct them.



[FROM OUR SPECIAL CORRESPONDENT.]

PROVIDENCE, June 15, 1888.

A midsummer dullness pervades the business today, as much so as at any time during the past two months. The only activity being shown whatever is by the manufacturer himself in getting out new designs and patterns for the fall trade, which is confidently expected to open on or before July 1, and, considering the light and conservative buying during the past six months, should be reasonably good. Many of the firms located here would find it quite difficult to figure any profit on the business transacted since the 1st of January; therefore to average up the year's business to any satisfaction whatever, the manufacturer should begin to receive orders of such amounts with which he can realize a profit. Such firms as have been sailing close to the wind of late and looking for some stray orders to keep them afloat financially, may possibly come to grief very soon unless the tide of business should change and run in their direction; they may possibly argue "that it is a long lane that has no turn," but it is not altogether safe to depend on any such weak staff as that to carry them over the brook.

Collections during the past month have been entirely in sympathy with the tone of the business transacted, viz., very dull and featureless to say the least. Firms are holding on to their funds rather than to pay them out in such a dull season, except where they feel that they are really forced to. Failures have been few and for small amounts, as none of great consequence have occurred to mar the serenity of the manufacturer, for which he feels truly thankful, being that he is unable to do any business to accumulate more accounts on which concerns could fail.

Mr. C. Anthony Fowler and Mr. Walter G. Clarke, of Attleboro Falls, recently returned from salmon and trout fishing at Rangely

Lakes, Maine, where they captured some very fine specimens of both species, some of which weighed as much as seven pounds each.

The manufacturers doing business in this city have received notice of the assignment of Mr. E. B. Hayden, doing business at No. 65 Nassau street, New York City, with two retail stores at Nos. 205 and 451 Fulton street, Brooklyn. He assigned to Edward E. Ford and gave preferences to the amount of \$1,104. Mr. Hayden was formerly a member of the firm of Hayden & Carter, but has been alone since about 1879. He claimed to carry a stock of \$18,000 on a capital of \$9,000 in the two stores. During the year 1884 he suffered a loss of about \$4,000 through the peculations of an employee of one of his Brooklyn retail stores. His liabilities are put down at about \$18,000. The stock in the Fulton street store only amounted to about \$6,000, but Mr. Hayden offered to compromise at 100 cents on the dollar as follows, viz., 30 cents the first year and 10 cents each succeeding year for seven years, payments to be made in notes endorsed by his wife.

Mr. E. E. Wadsworth has made an assignment to J. J. Connolly, giving preferences of \$202. The failure strikes very light on Providence manufacturers, and is looked on as being of small importance, as the whole stock carried was only figured to amount to about \$7,000. Ill-health and the great depression of business is claimed as the cause of failure. Mr. Wadsworth is claimed to be suffering from quick consumption and deserving of sympathy.

Mr. John Moore has given a chattel mortgage for \$3,000.

Mr. Henry Becker has retired from the firm of Hancock & Becker. The firm will be continued under the firm name by the two remaining partners, Chas. E. Hancock and G. Becker.

A large five story building on Summer street is being erected by Mr. E. Haskins, to be used as a factory for the use of manufacturing jewelers. The building will be ready for occupancy about the 1st of July. The Horace Remington building, on the corner of Page and Friendship streets, is fast approaching completion, as is also the W. H. Robinson building, on the corner of Eddy and Fountain streets. The Billings Brothers' building is making good progress, and very soon the manufacturers will have all the first-class quarters that they can wish for in which to transact their business, and rents in old and tumble-down rookeries will necessarily have to be lowered to be able to retain their tenants.

Limaeus V. Kennon, father of Fred. V. Kennon, died at his residence, No. 42 Sutton street, on Monday, in the fifty-third year of his age.

The annual meeting of the "New England Manufacturing Jewelers Association" was held on Saturday, June 2, at Rhodes-on-the-Pawtuxet. Chowder was served at 12.30 P. M. and the dinner at 4 P. M. Members left every half hour from Market Square; games of various kinds were indulged in and a very pleasant afternoon enjoyed. The following named persons were elected as officers for the ensuing year: President, Alfred S. Potter; Vice-Presidents, Edwin Lowe and Wm. W. Fisher (in place of R. S. Hamilton, resigned); A. A. Bushee, Secretary; John A. McCloy, Treasurer. Executive Committee: J. M. Buffinton, Frank T. Pearce and Hensy G. Smith. Five resignations were received and accepted, and the following named persons were elected to membership: W. S. Godfrey, B. A. Ballou, W. H. Richmond, L. M. Jackson, S. S. Wild and John T. Hamer. The receipts for the year were \$647.54, the expenditures \$536.75, leaving a balance of \$110.79, besides \$600 on deposit at the Mechanics Saving Bank, making total cash on hand \$710.79.

In the suit of Mr. C. S. Pine, of this city, against the Providence and Stonington S. S. Co. for \$10,000 damages for alleged injuries received in the collision of the steamers *Narragansett* and *Stonington* during the year 1880, resulted in a verdict against the plaintiff in the Supreme Court of the State of New York. The decision and verdict was given on the ground that the collision occurred outside the

boundaries of the State, and that Mr. Pine was a non-resident.

In the U. S. Circuit Court at Boston, June 7, before Judge Nelson, the jury found for the plaintiff a verdict for \$2,744 39, in the case of *E. H. Reynolds et al*, of this city, *vs.* *D. E. Coddington et al*, of Attleboro. The plaintiff sought to recover \$3,300 for a bill for sheet metal and gold wire sold to the defendants, the defense being that the goods were not up to the quality represented.

Creditors of A. J. Robinson, formerly doing business at No. 223 Westminster street, this city, who assigned to Joseph B. Knowles in April, 1885, have been notified by the assignee that all claims must be presented within six months, to entitle them to participate in the settlement then to be made.

The Gorham Manufacturing Co. will soon commence on their new building, which will be one of the most complete plants of the kind in the United States, and an ornament to the city.

Mr. Chas. Livermore has gone to his summer residence at Shawomet Beach for the season.

Mr. Chas. A. Russel and family have gone to their farm at North Smithfield for the summer.

Mr. Geo. H. Fuller will rusticate for the next three or four months at Nayatt Point.

Mr. B. E. Daggett has been elected Vice-President of the Warwick Club for the present season.

Mr. H. S. Dorchester has built for himself at handsome cottage at River View.

Mr. Fred. I. Marcy, delegate, and Mr. Isaac L. Goff, alternate, to the Republican Convention, started for Chicago on June 15.

The Nathaniel Grant homestead, No. 163 Broadway, was sold at auction on May 29 last.

Mr. C. H. Perkins, of F. T. Pearce & Co., and A. B. Gardiner, of J. W. Richardson & Co., started on Friday for Rangeley Lakes, Maine, on a fishing trip, to be gone several days.

Senator Chas. Sydney Smith and Representatives John M. Bufinton and Stillman White, started for Newport Monday afternoon to be in attendance at the session which opened on Tuesday.

The marriage of Mr. Wm. Edward Fiske, bookkeeper for Howard & Son for a number of years past, took place recently, the happy lady being Miss Bertha Lewis; we wish them a long and happy life.

Mr. Frank E. Comey and wife have been on a visit to Washington, D. C.

Mr. Joseph H. Fanning has been elected paymaster of the Marine Corps of the Artillery Veteran Association.

Mr. Chas. W. Battey now represents the firm of W. R. Lane & Co.

Mr. Chas. M. Clark will locate with the Seerey Manufacturing Co. next season, it is said.

Mr. Geo. Angell will be with F. T. Pearce & Co. during the coming fall season.

The complimentary clam-bake and banquet given by the public, invited Mr. M. Fitzgerald to the members of the "Manufacturing Jewelers' Board of Trade," was held on Friday, June 8, at Field's Point, and was attended by about one hundred and twenty-five representatives of the different firms located in this city and the Attleboros, and was conceded to have been the most enjoyable time experienced in the history of the Board of Trade. Speeches were made by Messrs. Fitzgerald, A. M. Williams, George P. Tew, Senator Chas. Sydney Smith, ex-Alderman Geo. P. Morton (cashier of the Phoenix National Bank), and Walter B. Fost, editor of the *Manufacturing Jeweler*. Letters of regret were received and read from several who were unable to attend. The afternoon's festivities came to a close by Mr. Herbert E. Brown leading off in singing (that

familiar to you all) "Auld Lang Syne," amidst three cheers from the assembled guests to their generous host, Mr. M. Fitzgerald, and repaired to the steamer *City of Newport* (chartered for the occasion) and reached this city at about 7.30 P. M., and all more than pleased with the enjoyment afforded them during the afternoon, and each felt in his heart, "Long live brother Fitzgerald." FAIRFAX.



The following list of patents relating to the jewelry interests, granted by the U. S. Patent Office during the past month, is specially reported to THE JEWELERS' CIRCULAR by FRANKLIN H. HUGH, Solicitor of American and Foreign Patents 925 F Street, N. W., near U. S. Patent Office, Washington, D. C. Copies of patents furnished for 25 cents each.

Issue of May 22, 1888.

- 18331—DESIGN for Button Back. Shubael Cottle, New York, N. Y.
- 15,490—Trade Mark for Metal Tableware. The Holmes & Edwards Silver Plate Co., West Stratford, Conn. "The word 'Oriental.'"
- 383,156—Button. William Starley, Coventry, England, Assignor to Albert H. Overman, Newton, Mass.
- 383,219—Watch Case Pendant. Henri Gerber, St. Imier, Switzerland, Assignor to Ernest Francillon & Co., same place.
- 383,239—Method of Preparing Hollow Stock for the Manufacture of Jewelry. John S. Palmer, Providence, R. I.
- 383,239—Plate for Shaving Gold Plated Shells, etc. John S. Palmer, Providence, R. I.
- 383,240—Manufacture of Gold Plated Wire Stock for Jewelry. John S. Palmer, Providence, R. I.
- 383,241—Plate for the manufacture of Plated Wire Stock. John S. Palmer, Providence, R. I.
- 383,256—Repeating Watch. Henri O. Stauffner, Ponts-Martel, Neuchatel, Switzerland.
- 383,260—Striking Watch. Justin Walzer, Chaux-de-Fonds, Switzerland. Patented in Belgium May 31, 1886.
- 383,326—Machine for Making Pendants for Watches. Alfred Stalnacke, New York, N. Y.

Issue of May 29, 1888.

- 18,356—DESIGN for Watch Charm. Edwin Terry, Brooklyn, N. Y.
- 15,522—TRADE MARK for Watch Cases. The Brooklyn Watch Case Co., Brooklyn, N. Y. The word "Granger," in connection with the representation of a stag's head.
- 15,530—TRADE MARK for Gold Pens. John Foley, New York, N. Y. The word "Foley."
- 383,439—Electric Alarm Clock. Edward J. Colby, Chicago, Ill.
- 383,441—Detachable Button, William W. Covell, Providence, R. I.
- 383,539—Pendulum for Clocks. Albert L. Parcellle, New York, N. Y.
- 383,604—Eye Glasses. Walter S. Wells, New York, N. Y.
- 383,673—Stem Winding and Setting Watch. Wm. H. Stevens, Buffalo, N. Y., Assignor of one-half to Henry K. Stevens, same place.
- 383,719—Lace Pin or Brooch. Edward D. Ganter, Glasgow, Ky.
- 383,749—Split-Seconds Stop-Watch. Charles H. Meylan, New York, N. Y.

Issue of June 5, 1888.

- 15,579—TRADE MARK for Filled Gold Chains. William H. Robinson & Co., Providence, R. I. The word "Seamless" asso-

ciated with the abbreviated words and initials "Wm. H. R. & Co."

384,122—Opera, Field or Marine Glass. Wm. A. Cardwell, Moat Croft, Eastburne, County of Sussex, England.

384,166—Hair-Spring Collet and Stud. Henry Huguenin, Waltham, Mass.

384,191—Clock Striking Mechanism. Charles E. Burnham, White Plains, N. Y.

384,226—Method of Making Buttons. Shubael Cottle, New York, N. Y.

Issue of June 12, 1888.

18,387—DESIGN for Handle for Forks, etc. George W. Shiebler, Brooklyn, N. Y.

384,260—Spectacle Bridge. George Johnston, Detroit, Mich.

384,271—Electric Pendulum Clock. Albert L. Parcelle, New York, N. X. Assignor to the Manhattan Clock Co., of Colorado.

384,346—Watch Case. Edward C. Chappatte, Philadelphia, Pa., Assignor to the Keystone Watch Case Co., same place.

384,380—Watch Case. Charles F. Morrill and David C. Percival, Boston, Mass.

384,399—Gem-Setting. Warren G. Smith, Brooklyn, N. Y.

384,426—Locket. Joseph Cohn, New York, N. Y.

384,472—Electric Winding Attachment for Clocks. Andrew J. Reams, Augusta, Kans.

384,475—Eye Glasses. Augusta Schultze, New York, N. Y.

384,481—Spectacle Temple. Maurice A. Vanderwaag, Ronkonkoma, Assignor of one-half to Adolph Bechtold, Brooklyn, N. Y.

384,544—Ruby-Pin Setter. Paul Ramser, Dubuque, Iowa.

Issue of June 19, 1888.

384,623—Watch Case—Edward F. Heffernan, Toronto, Ontario, Canada.

384,629—Pendant Setting. John T. Joyce, Plainville, Mass.

384,640—Watch Case. Robert J. Quigley, Toronto, Ontario, Canada.

384,668—Watch Hair-Spring Stud. Leo Aeby, Columbus, Ohio.

384,669—Stem Winding and Setting Watch. Leo Aeby, Columbus, Ohio.

384,670—Banking Device for Time Piece Escapements. Leo Aeby, Columbus, Ohio.

384,693—Ruby-Pin Setter. Frank Hyde, Sioux Falls, Dak.

384,737—Time Piece. Charles Bickford, Boston, Mass.



[FROM OUR SPECIAL CORRESPONDENT.]

CINCINNATI, O.

Cincinnati has long been recognized as one of the leading wholesale cities of the southwest, and until a few years ago held most of the business south of the Ohio river. Merchants coming as far north as Cincinnati to make the season's purchases, find almost as good a market here as could be found any where farther north. Of late years the fast growing cities of Indianapolis, Louisville, Memphis and Atlanta have interfered more or less with her wholesale as well as her manufacturing interests. The facilities for shipping merchandise from Cincinnati to the south or west are as great as any city in the states. With the Ohio river to compete with the many railroads centering here, the rates for freight can never be exorbitant. In referring to the jewelry business, I can truly say that Cin-

cinnati has her share. Not only retailers and jobbers but manufacturers.

The largest and leading house in the jewelry business being the old established house of Duhme & Co., having been established in 1843 by Mr. H. Duhme. This firm to-day is composed of Mr. H. Duhme, Mr. R. H. Galbrath, Mr. Frank D. and Charles H. Duhme, sons of Mr. H. Duhme. They occupy two large stores in the Carlisle building at the corner of Fourth and Walnut streets. These stores have a frontage of 25 feet each, and extend back for 125 feet, being finished inside with cherry and black walnut (natural finish). The corner store is devoted to the sale of watches, diamonds, silver and plated ware, and they have as complete a line of these goods as any house outside of New York. The other store is devoted to the wholesale department, and for their display of French clocks, bronzes, pottery, cut-glass, and novelties in rich, fancy goods. The basements under these two stores are used for the manufacturing of solid silver ware, and in this line they do a large business, as they manufacture goods after their own designs, and the result is that you will often find novelties in this department that have not been shown in the eastern markets. The upper stories of this building they occupy for the manufacturing of gold watch cases, gold diamond mountings and rich jewelry. This watch case factory, I am told, is the second largest in the west, and is doing a very satisfactory business. Their jewelry factory does a good business in the manufacturing of rich and odd designs in diamond mountings and gold brooches, and they employ about 175 people. Mr. Galbrath goes abroad every year to purchase diamonds and novelties for the different departments. Mr. Galbrath also has charge of the retail department of this house. Mr. Charles H. Duhme the wholesale, and Mr. Frank Duhme the finances. They employ two travelers who look after the trade in the south and west, and their branch establishment at Kansas City, managed by Mr. W. F. Wilmes, takes care of the business west of the Mississippi river.

The next largest retail store is that of E. E. Isbell & Co. The firm is composed of Mr. E. E. Isbell and the estate of Thomas Gaff. They have a handsome store well stocked with rich, elegant goods, and Mr. Isbell is called the art jeweler of Cincinnati. They have not as large a store or stock as some others, but none will deny that they have a beautiful stock of well selected novelties second to none in the city. Their stock comprises fancy gems, jewelry, cut-glass, silver, lamps, leather goods, and they are the Cincinnati agents for the sale of the Kezonta Pottery Company. These beautiful goods are manufactured here, and rank with the best of imported goods for style and finish and often mistaken for Royal Worcester. Mr. Loring Andrews is Mr. Isbell's assistant, and is recognized as authority on pottery. Their store is No. 58 West Fourth street, and they are direct importers of diamonds and fancy stones.

Mr. C. Hellebush, No. 77 West Fourth street, both wholesale and retail jeweler, established the business about 1850. He has a large store about 25 by 150 feet deep, with black walnut fixtures. The side cases in this store are the largest I believe of any store in the country; handsomely carved frames with French plate glass 11 feet long, and his cases are well stocked with all the latest goods, and they are doing a very satisfactory business in both their wholesale and retail departments. Mr. C. Hellebush manages this business and looks fully after the diamond department. His son, Mr. C. H. Hellebush, has full charge of the retail department, ably assisted by Mr. William Wilson McGrew, who is one of Cincinnati's oldest jewelers. The wholesale department is in charge of Mr. A. B. Clark. They employ two travelers and are well represented in the south and west. In their retail department they sell the Vacheron & Constantin for their fine watch. Several years ago Mr. C. Hellebush was instrumental in establishing a factory for the manufacturing of fine clock cases, something to take the place of the fine French marble clock cases which were then imported at high cost, and it is hardly necessary for me to speak of the success of this concern, as it is quite well-known and wonderful how perfect an imitation these cases are of the finest

French case, both plain and ornamental. The case itself is made of iron, then enameled and inlaid with gold or imitation fancy French marble of a variety of colors, and in such a perfect manner that none but the experienced could detect it from the imported French marble case. The movements in these cases are the best Seth Thomas movements with plain or visible escapements, and with gong or bell strike, and these clocks sell at about one-half the price of the imported clock, and are fully warranted.

J. Holland Pen Co., No. 19 West Fourth street. This business was established in 1841 by Mr. G. W. Sheppard, and was succeeded by Mr. J. Holland in 1862, and in 1885 it was organized into a stock company for the manufacture of gold pens, pencils and tooth-picks, and I think it is the oldest gold pen house in the country. Mr. Holland commenced at the bench and has worked his way up to the head of this concern, which speaks well for his ability. They employ five travelers, who sell their goods all the way from Boston to San Francisco. They have recently gotten out a beautiful line of silver and gold pen holders, pencils and tooth-picks, in odd designs for which there is a great demand both in oxidized and white silver. They employ about eighty men in their factory, and have done a very satisfactory business so far this year. With these new designs and other novelties he is to introduce for the fall trade, he hopes to have a very successful year's business.

Fox Bros. & Co., 68 and 70 West Fourth street. This firm is composed of Mr. Solomon Fox, Mr. George Fox, Mr. Henry Fox, and was established here about twenty-one years ago. They are direct importers of diamonds and fancy stones, and have quite a large factory for the manufacturing of novelties in diamond mountings and special orders. They employ about thirty men. One of the members of this firm is abroad all the time looking up novelties for this house, and watching the markets in their interests. They have three travelers and cover the western and southern states.

Oskamp & Nolting, 2d floor, corner Fourth and Walnut. Mr. Charles A. Nolting and Mr. Ludwig established this house about seven years ago, and about one year ago Mr. William S. P. Oskamp purchased Mr. Ludwig's interest. This firm is composed of young and active men, and are bound to succeed. They carry a full line of American and Swiss watches, jewelry and jewelers' findings, and are direct importers of diamonds and sell them either mounted or loose. Mr. Oskamp previous to his coming into this firm was for fifteen years at Mr. C. Oskamp's. They employ four travelers, and are well known throughout the west and south. Mr. Oskamp is now in Europe.

Messrs. A. G. Schwab & Bro., 53 West Fifth street, have been in the business for the past twenty years, and at this location for the past ten years. They are direct importers of Swiss watches, clocks, bronzes, materials and tools, and carry a full stock of American watches and jewelry. They employ four travelers through the south and west. They are the patentees of the Automatic watch sign, which is considered the most attractive watch sign manufactured. They report good spring trade.

Noterman & Jones, 169 and 171 Race street, were established in 1869, and make a specialty in the manufacture of white stone goods. They also manufacture diamond mountings and all kind of badges to order. They are represented in the west and south by one traveler, and employ about thirty-five men in their factory. They report a good business so far this year.

A. & J. Plaut, 13 Arcade, Cincinnati, O., established in 1878, and are jobbers. They import direct diamonds and Swiss watches, and advertise as special wholesale agents for the Dueber Watch Case Co., and the Hampden movements. They carry a full line of gold and rolled plate jewelry and campaign charms and pins. Have five travelers throughout the south and west. The members of this firm are Mr. A. & J. Plaut, and Mr. Ferd. Phillips.

Mr. L. Gutman, 51 West Fourth street, is another live jobbing house. As they are liberal buyers, they must necessarily be liberal sellers, in

other words they do a large business and are a successful concern.

Among the other jobbing houses may be mentioned Bue Lindenberg & Co., 169 and 171 Race street.

Joseph S. Voss & Son, 6 West Fourth street.

D. Schroeder & Co. in their new store, 232 Race street.

Strauss & Stern, 178 Race street.

H. Hahn & Co., Fifth and Vine street.

S. Amberg & Co., 61 West Fifth street.

HARD SOLDIER.

Practical Hints on Optics for Skilled Opticians.

[BY C. A. BUCKLIN, A. M., M. D., NEW YORK.]

THE FOLLOWING letter of enquiry being pertinent to the subject, now being considered in THE CIRCULAR, I publish the same:

LIVONIA STATION, N. Y., May 4th, 1888.

DR. C. A. BUCKLIN.

I have had a better idea of the mode of examination for obscure Optical and other defects of vision, but occasionally find a case that causes me considerable study and anxiety, and occasionally I am puzzled as to know how or what would be the best correction. The following is a sample:

I have carefully examined the eyes of Miss D. Age about 16 to 17, and I find Vision with both eyes.

$= \frac{2}{4}^{\circ}$ with R. $= \frac{2}{4}^{\circ}$ L. $= \frac{2}{4}^{\circ}$

R. Eye + 60c. axis 135 Vision $= \frac{2}{4}^{\circ}$.

L. " + 60c. axis 50 " $= \frac{2}{4}^{\circ}$.

and lines look alike.

Internal Rectus Overcomes 17° prism.

External " " 18° "

Superior " " 6° " 20 feet.

Inferior " " 3° "

PROMPTLY. This seems to me a difficult case, and I would be pleased to have your advice in the matter.

On application of Atropia, correct test:

R = + 48 axis 135° V $= \frac{2}{4}^{\circ}$ and lines look alike on fan.

L = + 48 axis 50° " $= \frac{2}{4}^{\circ}$

She cannot use the best correcting glass to read with fifteen minutes without blurring, and less than that produces discomfort. The ocular muscle trouble being with both the vertical and horizontal muscles. I am at a loss how to proceed farther. I will enclose a postal and please say on that what I can do, and also give this case a little space in your Optical Department of THE CIRCULAR. She can not read any length of time without glasses.

The first time I examined with Prism she could only overcome 12° internal, 12° external, but this time as above, Dr. R. of Rochester, had fitted her personally, and I copy his prescription.

R. + 50° c. axis 150° .

L. + 50° c. axis 30° .

You will notice the axis is a little different from mine, he examined without atropia, and the axis of my prescription I got with an application of atropia.

J. D. HOWELL.

That Mr. H. should find trouble with a case so troublesome is not wonderful. Such a case gives every one trouble, and it appears that the muscular element in the case has passed the attention of a specialist of reputation unnoticed. The vertical deviation undoubtedly causes the most trouble.

Mr. H. can simply determine by experiment whether a prism before one eye base up or down relieves the weak vision more per-

fectly or a prism before one eye base in to relieve the internal muscle with a prism before the other eye with the base up or down to relieve the defective vertical muscle. It is a question of prisms one or both ways, or a question of tenotomy of the too powerful muscles. Tenotomy, carefully applied, more frequently gives relief than prisms, although prisms frequently give relief. The muscular defect is, without doubt, the cause of the trouble.

The question of axis can only be determined by direct experiment on the patient.

The book of Errors entitled Defects of Vision, by Brundwell Carter, F. R. C. S., London, has been received and the numerous errors will be discussed in due time.

We will return to our subject of muscular deficiencies and consider the old subject in its clothing of new words, namely, the various forms of "*phoria*."

We saw in the May number that after diplopia had been produced by the use of prisms with the base in, hyperphoria exists when the right image falls below the visual line of the left eye and left hyperphoria exists when the left image falls below the visual line of the right eye. The degree of prism base up or down necessary to bring the images to a horizontal line represents the degree of hyperphoria. The author, clothing this old subject in new words, says: the best treatment for hyperphoria is tenotomy of the muscle which forces the eye out of its proper direction. "It is not *always* easy or possible to determine to which vertical muscle we are to attribute the vicious tendency.

"The *superior* rectus of one eye may be too short," causing too great tension upward, or the *inferior* rectus of the opposite eye may be at fault, tending to draw the eye downward. "With all these elements of uncertainty the highest skill may be demanded in forming a correct conclusion."

"In the majority of cases, however, in which the hyperphoria does not exceed three degrees, it is proper to relieve the superior rectus of the eye which has the deviating tendency upward, or the inferior rectus of the other eye. In general it will be found best to relieve the superior rectus."

If more than three or four degrees of deviating tendency is found, it is better to correct part on the superior rectus of one eye and what remains on the inferior rectus of the other eye at some future date.

NOTE.—The author recommends exclusively tenotomy of the faulty muscle. Prisms may, however, be frequently used to advantage, although he does not favor their use.

In reading the definition of hyperphoria let it be remembered that the constant point considered is the *tending* of one visual line above its fellow. The fact that binocular vision is attained excludes the possibility of one visual line lying above its fellow; it can only have a tendency to lie above its fellow.

The difference in the plane between the two visual lines must be one which only becomes manifest by the artificial production of homonymous diplopia.

It is further stated that hyperphoric applies to one visual line, but does not indicate that it is at fault, it indicates simply that the line tends above its fellow. The normal lines should lie in the same plane, and the proper plane of each eye is that plane which is indicated by a straight line from the macula lutea to the object looked at.

The Graefe test has been employed generally since it was published by its originator to detect insufficiencies of ocular muscles. It is very generally acknowledged that when horizontal diplopia is caused artificially, that any insufficiency in the vertical straight muscles will become evident. Graefe treated asthenopia caused by insufficiency of the vertical muscles with prisms successfully.

We are left entirely in the dark by the above statements as to which is the faulty muscle in any given case of hyperphoria. Thus if the left image stands higher than the right, either of two conditions are present. Either the left visual line tends too low, or the right visual line

tends too high. It has been stated that a prism with its base down before one eye is equal to prism with its base up before the other eye. We must infer then that any prism that represents the power of the superior rectus of the right eye represents also the power of the *inferior* rectus of the left eye. We must then further admit that the prism which measures the superior rectus of the left eye measures the power of the inferior rectus of the right eye. From this we must infer that the inferior rectus of one eye is the antagonist of the superior rectus of the other eye.

It however appears more natural to consider that the inferior rectus of one eye is antagonized by the superior rectus of the same eye. It has been stated that we can not measure the power of each muscle separately, but only relatively to the opposing muscle of the other eye.

A further consideration of how to locate which is the weak muscle will be considered in our next.

The school of Optics which has been very successful in teaching men in a thoroughly practical way the laws and practice of Optics, has been injured in its sphere of usefulness by the enterprise of optical dealers, who offer, as a chromo and a bid for the sale of optical goods, free instruction. They teach in two or three days, quite sufficient in their minds to enable the optical dealer to become a skilled optician. I have taken great care to ascertain, and I find that students who are victims of this peculiar mode of doing business are sent home well loaded with a stock of optical goods.

They advertise extensively, and when the opportunities offer for them to gain a reputation as an optician their ignorance of optics causes them to do so much work that is absolutely bad, that they destroy not only their reputation as an optical dealer, but they injure their jewelry business and become the butt of ridicule of their townspeople.

I think it is simply *mean* to send a man home with a test case and assure him he understands its use, when the truth is he must understand the subject much more practically than his instructor to succeed as a retail optician. I feel quite sure that time will demonstrate that it is necessary to understand optics before one can become skilled as an optician. To demonstrate the truth of my claim, I shall endeavor to place a competent party in every town in which these gift enterprise opticians are at work, if I am correct in my views, the laws of competition will very soon demonstrate the fact.

The last class of the season finished June 29th. There will be no further instructions given until the middle of September. Those desiring to take this class should communicate their intentions as early as possible.

Courtesy and Politeness.



THE MAKING of a successful business man, either as principal or subordinate, requires many good qualities in combination, but if we were asked to name the most essential factors, we should unhesitatingly declare them to be uniform courtesy and habitual politeness. A pleasant, affable, accommodating salesman will make friends where one who is surly and curt in his answers only makes enemies. Men who have wives and daughters should take a hint from their comments when returning from their shopping excursions. "I'll never go in that store again, where the clerks are so disagreeable and unaccommodating," is a remark frequently heard uttered by ladies returning, tired and exhausted, from their attempts to supply their necessities at the stores that are maintained for that purpose. They relate how they went to this counter or that one, and found the attendant so inattentive that they left without purchasing. Instead of striving to satisfy the would be customer, she could obtain from the attendant nothing but the most unsatisfactory

responses to her inquiries, and such information as she did obtain had to be drawn out of the unwilling salesman by the cork-screw process. Salesmen of this kind are an injury to any business, yet they are to be found in large numbers. When a business man has purchases to make he gets very indignant if he is not properly and quickly served, yet he will return to his own place of business and deal out to his customers precisely the kind of treatment he complains of in others.

Courtesy is the least costly of all the factors that go to make up the successful salesman, and is also a commodity that subordinates are too frequently lacking in; which is a very good reason why they continue to be subordinates all their lives. But what a man exacts of those who serve him he should be willing to accord to those who serve others but have business with him. Travelers have many complaints to make of their treatment by some of the dealers they come in contact with. These seem to put on their porcupine skin at the sight of a traveler with his sample case, and to bristle with repulsion at every point. They keep him waiting before responding to his invitation to look at samples, and adopt a tone and manner towards him that is little less than a positive insult. The gruff and glum dealers think that an hour is nothing to keep a traveler waiting, yet it may mean to him the loss of a train and a day's idleness, the missing of other customers and the expenses of a lost day. It would take the dealer but a short time and cost him only a few pleasant words to expedite the work of the traveler, and to send him away light-hearted and contented, instead of gloomy, dismal and overflowing with bad language. These surly customers injure themselves by their disagreeable manners as much as they do anyone. For the traveler who conceives that he has been badly treated is apt to give an unfavorable report of him to his employers and to all other travelers with whom he comes in contact.

It can be taken for granted that the dealer who is discourteous to one person will be so to another, and that if he makes it a rule to snub travelers, he is short and crusty with his customers, and that he does not control the amount of trade he ought to. A salesman, be he proprietor or subordinate, should be uniformly courteous and polite, employing the *suaviter in modo* rather than the *fortiter in re*, which, being freely translated into English, means that you can catch more flies with molasses than you can with vinegar. In addition, the salesman should always be cleanly and neatly dressed; he is not a laborer or a mechanic, whose duties preclude clean linen and a neat appearance. Appearances go a long ways in making a good impression, and no one likes to do business with a person who is untidy and slouchy in his dress. It costs no more to be neat and tidy than it does to be slovenly; indeed, it is economy to take good care of one's clothes, for they are presentable and wearable for a longer time than clothes that never know a brush and are thrown about promiscuously in the dust heaps. It is expected that a blacksmith or a plumber will carry about with him the dirt and grime that is inseparable from the material he has to handle; he is tolerated notwithstanding his dirt. The jeweler, however, is not called upon to dabble in goods that soil either the hands or the clothes, and when these are in that condition they repulse the fastidious and convey an unfavorable impression to all who observe the facts. If a dealer does business in a country place, it does not follow that he should adopt the dress and manners of farm laborers. Personal appearance and methods are more properly governed by the requirements of one's occupation than by his neighborhood surroundings. The handling and selling of jewelry is the occupation of a gentleman, and those engaged in it should at all times observe the attributes of gentlemen.



[FROM OUR SPECIAL CORRESPONDENT.]

MINNEAPOLIS, MINN., June 16th, 1888.

Trade among jewelers is fair, but not as good as most of them would like to see it. The jobbers report their trade throughout the Northwest good in volume to what it was a year ago, but they find collections exceedingly hard. The whole country is feeling the stress of the close money market, the partial crop failure a year ago, and the conservative influence always present on a presidential year. The prospects are exceedingly good, however, for greatly improved conditions. The wheat crop of the Northwest, which plays so important a part in all the trade of this region, never promised better than it now does. For the past two years there has been something akin to a drouth, and the yield has been restricted in many localities for want of rain, and failure has resulted from the same cause in other localities. But there has been an ample fall of moisture this spring thus far, and although the season is late, now that warm weather has come upon us, the crops have made wonderful headway. If the yield is all that it now promises, trade in the Northwest will be better than it has been in several years. Not only is there promise of a larger yield than usual, but also of better prices for wheat than has prevailed for the past two or three years.

Berthiame Bros., who were in business here and failed a short time since, returned to their old stamping ground, Crookston, and have organized the Berthiame Bros.' Jewelry Co., under which name they have resumed business. They made some money at Crookston before they came to Minneapolis, and hope to regain their position where they had their original success.

The Rockford Watch Co. have been looking about in this vicinity for a new locality. Overtures have been made to business organizations in Minneapolis, Duluth and probably St. Paul, to secure, if possible, an inducement to enable the company to remove from Rockford, Ill., to one of these western cities. Duluth has strong hopes of obtaining the works, but nothing definite has been accomplished as yet, and there is no present probability that a large enough sum of money will be secured in either case to result in a removal.

A rage among the ladies for a new order of bangle bracelets is devastating the jewelry shops here, as elsewhere, of the balance bridges taken from the old Quartier watches. Some of these bridges, as every watchmaker knows, are very elaborate in design, and no two are found alike. The bridges are removed, fastened together as a bangle bracelet, as dimes and dollar pieces are fastened together for bangles, and thoroughly plated. They make a very striking ornament, rather barbaric in style, and a person not familiar with watches and the character of the material would never suspect their origin. A short time ago an itinerant appeared here and bought up all the old watch movements that he could find, not giving any intimation what he wished to do with them, but presumably he removed from them the balance bridges. Latterly one or two ladies have made a tour of the jewelry shops in search of them, and the jewelers have been overhauling their old watches and are busy now in delving in the depths of their scrap piles since the rage has given value to that which heretofore has had little or no intrinsic value. Some of the old-time watchmakers, in little shops patronized by foreigners, have been astonished at the demand suddenly created for that which they regarded as valueless.

Mr. William Kline, who has been doing business heretofore in Centralia, Wis., has removed to Minneapolis to make it his permanent home.

Winter & Lueck, who have been doing business on Washington

DR. GATLING has patented a new gun metal, composed of steel and aluminum, which is said to be of remarkable strength.

avenue, Minneapolis, have removed to Nicollet avenue, and are now situated only two or three doors from Mr. B. B. Marshall, Mr. Elliott Storer, and several others of the retail dealers. They have fitted up a very attractive store, which is another addition to the many handsome establishments in Minneapolis.

Mr. W. W. Lamb, who has been in business at Fifield, Wis., has recently moved to Glidden, Wis., where he has opened a store.

The jewelry stock of Mr. E. F. Richart, at Cloquet, has been sold to McGarvy & Allen, who succeed to the business.

Advice to Watchmakers' Apprentices.

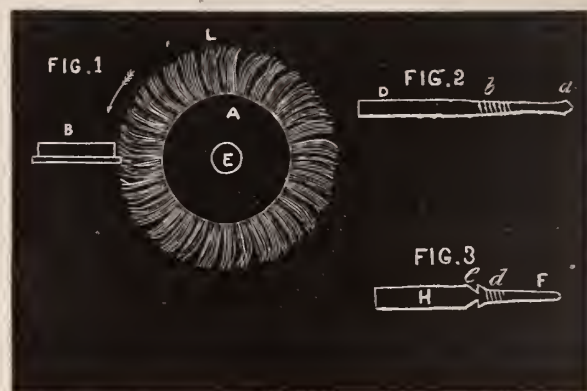
BY A MAN WHO HAS SPENT TWENTY YEARS AT THE BENCH.



HERE ARE none of the modern watches which give the watchmaker so much bother as the little cheap chatelaine cylinders. They do not cost much, and, of course, the owners do not feel like paying any large sum for their repair. When one sells a watch of this kind he has to warrant it, although the chances are three to one he will have trouble with it. The true policy is to go through carefully every watch of this kind we sell before we let it go out of our hands. And when one comes in for repairs the best rule is to talk for all the money you can get for repairing it, and then you can put it down as a loss. I find the best way with these watches is to take nothing for granted and commence with the main wheel,

and inspect and put in order every single number of the train from the barrel to the balance. I know the subject of repair of cylinder has been written up, but as far as I have seen the essays have all been written for workmen using European tools, and even taking this view of it, many of the systems of repairs suggested were for a slow roundabout process. In this communication I propose to give American methods and tell how to use American tools. We will commence with the barrel and then take the train in detail up to the balance. The mainspring barrels of these watches are usually finished in a very rough manner, and the mainsprings of an inferior quality. We will first proceed to put the barrel right, then see to the center wheel, and so go along to setting other things in order. Frequently we find the barrel teeth rough and choked with burr. To remove this procure a scratch brush, such as the dentists use to smoothe up their cutters. They are about 2 inches in diameter, and consist of a single row of very fine steel or iron wires arranged in bunches of about $\frac{1}{16}$ of an inch in diameter. These bunches are set in wooden hubs and 1 inch in diameter, and are as close to each other as they can be put and have any wood between them. Those I have are marked No. 3½. What the rule is for grading them I am sure I do not know, but I do know my micrometer callipers tell me the wires of which the brush is made measure 3½ one-thousandths of an inch; such a brush mounted in a lathe will soon remove the burr from the tooth. The method of using will be understood by inspecting the cut, where fig. 1 shows the work is done. In this cut A represents the brush and B the barrel. The brush has a hole in the center of the hub which can be pushed on a brass chuck like a wax chuck turned tapering a little. The brush supposed to revolve in the direction of the arrow and the barrel is held so the fine wires are drawn rapidly through the teeth. The barrel B is revolved slowly so as to bring all the teeth in contact with the brush. The

next thing to look to is to see if the barrel runs true and the stem winding work does not dig into the barrel. Here, again, the steel wire scratch brush comes in good in smoothing up the teeth of the steel wheels which do the winding. In this case the brush is used with emery cake, another invention we borrow from our mechanical friends, the dentists. Emery cake is composed of fine emery and talow, made into cakes or tablets, and applied to the brush as it revolves slowly. It is well to have two of these steel wire scratch brushes, one to use with emery and one to use without emery. The reason of this is if you use emery for the brass teeth it will embed itself in the brass and cut the center pinion very quickly. After the teeth are smoothed out, put the barrel together (leaving out the mainspring) and place it and the center pinion in position to try the depth. This is a somewhat difficult thing to do, as we cannot place those wheels conveniently in a depthing tool. Put them in place as I said, and hold the center wheel with the forefinger of the left hand, and with the forefinger of the right hand try the barrel and see if the teeth have the proper side shake in the center pinion. It is difficult to explain how much side shake the teeth should have, as the leaves in the center pinion in one watch may be thinner than in another; but if the habit of testing depths in this way is once got into the workman will determine instantly if the depth is right. Now apply a gentle friction to the center pinion by putting in the center square and hold the finger pressed against it, and revolve the barrel slowly and see if it turns evenly and without hitches and jerks. If the depth is too shallow the barrel should be set forward to correct it. The center wheel teeth should also be brushed smooth with the wire scratch brush. These instructions may read as if taking too much



time, but if the appliances are got together and the hand becomes accustomed to the work, it really takes but a very few minutes to put these matters to rights. Another fruitful source of annoyance in these watches is the mainspring. These springs are usually of the most inferior order, and we find the inner ends full of little short bends, which is a big help towards stopping one of these watches. Usually the spring is too weak as well. Now, I do not approve of the principal of putting in a strong mainspring to compensate for bad workmanship, but we must have the proper amount of power, and a spring can as easily be too weak as too strong, and the excuse in these watches is the hook end of the mainspring is almost universally loaded with some device which fills the barrel to the exclusion of fully two coils of mainspring. Many workmen of fair abilities make a bad first in putting in hooks to mainspring barrels. A hook to hold securely should not extend into the barrel more than about once and one-half the thickness of the mainspring. A proper hook can be made very quickly in this way: Make a drill to fit, say, the No. 11 hole of your Swiss screw plate, and then cut a nice full thread on the shank above the drill as shown at fig. 2, where a represents the drill and b the tap; the wire of which the drill is made is a piece of steel which will fit some convenient split chuck. The method of using it is to let the drill make the hole, and then turning the lathe by hand tap out the hole. Keep such a drill for this purpose, and provide about 3 sizes corresponding to Nos. 11, 9 and 7 Swiss screw plate for different sizes of barrel. To make a hook take a suitable piece of steel wire and turn it to the shape shown in fig. 3,

cutting a screw to match the tapped out hole in the barrel cut off the screw at *e* and smooth the head; do not make a slot in it; temper it to a purple after hardening and screw in the barrel from the inside, taking hold of the part *F* with a pair of slide tongs; only let the head extend into the barrel a trifle more than the thickness of the mainspring, and cut off from the outside and file smooth. A No. 11 screw with a proper size head will hold these small mainsprings without any bits of spring to cumber up the barrel. If the spring is not exactly what it should be, put in a new one which will give you $5\frac{1}{2}$ turns of the winding arbor; with such a hook as just described you will find that the source of power is all right. Next, with the steel wire scratch brush clean all the burr from the teeth of the third and fourth wheels; then test the depths of these wheels, and if there is any positive fault make up our mind to remedy it quickly. What eats up the time in such jobs is indecision in studying what to do. The correct thing in all such jobs is to know exactly what you have to do and do it. In most of these watches the scape wheel is jeweled in the lower plate, and frequently the depth is bad between it and the fourth wheel, which no twisting about of the bridge over the scape wheel will remedy. In this case if the owner of the watch will pay for the watch, set in a new jewel so as to correct the depth; to tell how to do this will exceed the space we can occupy in this article.



[FROM OUR SPECIAL CORRESPONDENT.]

PHILADELPHIA, June 19, 1888.

Early closing is the rage among the Philadelphia jobbing jewelers, and the retailers are not behind their wholesale brethren in this respect. All the houses, big and little, have joined in the movement, and there is every promise that base ball matches on Saturday afternoons will have among their spectators large numbers of the employees of the various houses in the trade. The hours of closing have been fixed, after June 1, as 5 P. M. every day but Saturday, when business will be suspended at 1 o'clock. Messrs. Conover & Co., Muhr's Sons, Scherr & Co., Simons & Co., Hurlburt & Sons, Hollinshead Bros., Atkinson Bros., Schaefer and the rest have all united in the arrangement, and their example has been followed by Messrs. J. E. Caldwell & Co., Bailey, Banks & Biddle, and all the other leading retailers in town.

The firm of Hamrick & Son has virtually gone out of business at last. The stock of the firm in their Chestnut street store is all being sold out for the purpose of meeting the claims of the creditors, and enable the firm to effect a settlement of their outstanding debts on the basis of forty cents on the dollar, agreed upon. The amount realized thus far by the sale has not yet been made public, but it is believed the total will cover the indebtedness to the extent of the percentage referred to.

J. Bedichimer's Chestnut street store will also soon be a thing of commercial history. Mr. Bedichimer has decided to close out his retail business and devote all his energies to his original business, the manufacture and designing of badges and emblems. The retail business has never been particularly prosperous, although it is estimated that the house will be able to meet all claims on the basis of one hundred cents to the dollar. Some doubt is entertained among the trade generally as to the wisdom of selling out at this time of the year. The general opinion is that it would have been better policy to hold on until fall, when higher prices could be obtained for the goods. Mr. Bedichimer, however, seems to be perfectly satisfied as

to the advisability of the step he has taken, and of course that leaves no room for comment.

Every wholesale dealer in jewelry in this city is building on a good fall trade. The prospects they declare are more than promising, despite the Presidential election, which is naturally expected to unsettle business to some extent. Mr. Hurlburt, senior member of the firm of Hurlburt & Sons, says that since his recent change of base, fully noted in last month's CIRCULAR, he has experienced a steady improvement, which he is positive will grow in volume as the season approaches. David F. Conover is all smiles over the anticipation of the near future, and genial George Scherr is not a whit behind in prophesying good times. At Simons Bros. bustle and activity in preparations for a rushing business is apparent, and the Hagstoz's and the Hollingsheds are already beginning to experience the result of judiciously laid plans and well-selected territory for making sales. The National Watch Case Co., Messrs. Booz & Humbert's venture, is turning out lots of work preparatory to a heavy trade, and the Atkinson Bros. say that their Lancaster factory cannot turn out goods fast enough to supply the demand. The tariff scare is about over, although there is still a little timidity owing to the uncertainty surrounding the Mills bill and the coming great struggle for control of the national government.

A pleasant social event to record in the trade is the recent marriage of Mr. William R. Joraleman, of the firm of Joraleman & Diesinger, retail jewelers. The bride was Miss Sarah Riffert Moyer, daughter of the late Mr. John Moyer, who was a prominent and well known citizen.

H. Muhr's Sons are making alterations in their store so as to increase its depth. New private offices are being constructed, and the other offices refurnished. The store will present a handsome appearance when the work is completed.

Mr. E. S. Radley is building a new store a short distance below his present jewelry store on Frankford avenue.

The rumor that Mr. Charles O'Brien, of L. A. Scherr & Co., was going to Europe this summer, is denied by that gentleman.

Henry Berhend, 21 years of age, employed in the jewelry store of Mr. Thomas Leslie, in West Philadelphia, has disappeared. He took with him two gold watches, three diamond rings and \$175 in cash belonging to his employer. He taught a Sunday School class, and was highly esteemed by the community in which he lived. The police are looking for him.

Mr. David F. Conover has been taking frequent trips on the Delaware of late in Commodore Singlerly's yacht. The Commodore, as everybody knows, is the millionaire proprietor of the *Record*, and Mr. Conover says he entertains like a prince.

Mr. George W. Scherr, of L. A. Scherr & Co., goes to Atlantic City when he can get away from business.

There is little or nothing new to relate about the optical business. It is dull, but the dealers are sanguine—in fact, flushed with a belief that a great trade will be done in the fall. Mr. Williams, of the Philadelphia Optical Company, is authority for the statement that the opticians are making business every day by their careful prescription work, thus coming into active competition with high-priced oculists, and Mr. George Mayer feels complacent on the status of the situation.

Mr. Zineman will start on a Western trip, with San Francisco as the objective point, on July 1, and he will establish agencies for the firm of M. Zineman & Bro. at various places *en route*. The National Optical Company's works, under the management of Mr. C. B. Bishop, move along with every indication of permanent success, and there promises to be an increase in the number of hands employed in the factory in a very short time.

Mr. George Wells, of the American Optical Company at Southbridge, Mass., passed through the city on the 14th, on his way to Washington. His is the largest optical works in the country,

and Mr. Wells believes that the fall trade will be simply immense. Judging by his cheerful air, he is sincere in this conviction.

By-the-bye, all the optical men are "early closers." The same hours as prevail among the jewelers have been adopted by the eye glass dealers.

Bands innumerable will play during the coming campaign. So will Gautschi's music boxes, and they are calculated to create as much enthusiasm as the noisiest drum corps or the most resonant brass instruments. That's the way the Gautchis talk, and they also talk big business.

PENN.

Fashions in Jewelry

A Lady's Rambles Among the Jewelers.

THE month just past was a prolific one in weddings, both at home and abroad. Jewelry and silverware were the order of the day, playing, as these do, conspicuous parts on the occasion of all fashionable marriages. Jewelers and silversmiths who were provided with rare gems and unique designs must have reaped a beautiful harvest.

IN THE world of fashion now-a-days, women expect at their marriage to become the happy possessors of a lavish collection of gem jewelry, that is of itself a fortune as regards its intrinsic value in dollars and cents. Following are some of the articles included in the corbeille, as the French say, of a recent bride: A jeweled bee, with a very large pearl for the body, and rubies, sapphires, emeralds and diamonds mixed on the wings; a diamond spray for the corsage; a brooch of diamonds and emeralds; a *bouquet de corsage* made of several small brooches to match; a necklace with diamond fringe; bracelets of flexible gold and pearls; a pair of solitaire diamond ear rings; a pair pearl ear rings and an assortment of finger rings too various and numerous to mention.

THE engagement ring this season, as for several past, has been set with whatever gem the prospective bride personally admired most. The preference still remains with a solitaire diamond, but any other single stone is admissible, especially if it be remarkable in size, color or quality.

THE wedding ring remains what it has been for time out of date, a plain gold ring.

AT SOME of the London weddings the walking sticks—recently introduced for ladies' use, were carried by the bridesmaids, who were dressed in Louis XVI. costumes. On these occasions the walking sticks did not seem an innovation, but added, rather to the *tout ensemble*. These walking sticks, which as yet have been carried mostly in England at weddings, occasionally in the park or at the races, are made after the Louis XVI. model, very tall and having large looped bows of ribbons to match the costume at the top. Some are made of Malacca with gold tops, and some are of white enamel. It does

not seem at all probable that these sticks will become popular. They cannot well be carried with the parasols of the present time, for these are made with long sticks, modeled much like the canes described and afford two articles in one—a shade from the sun and a stick for walking.

AT THE fashionable weddings both in New York and London, has been apparent the popularity of decorative coiffures, gem-trimmed bodices and necklaces. On every recent occasion which called for full dress toilets, the more jewels placed on the bodice the better pleased everybody appeared to be. In illustration may be noted a bodice headed by velvet leaves, studded with diamonds; diamond buckles set sideways and secured with a small diamond brooch or star in the center; point d'Alencon lace held in place with gem-set butterflies and birds; and diamond sprays reaching from one shoulder to the center of the corsage in front.

AT THE last Queen's drawing room, a fact specially commented on in reports of the same, was the prevalence of jeweled bangles and bracelets worn over the long gloves, diamond aigrettes and tiaras on the head, and long sprays of foliage in diamonds around or across low corsages.

PARIS correspondents commenting on the toilets worn at recent soirees and fetes by the *elite* of many lands, emphasize the prodigal display of gems. Just think of one frail woman appearing in a gown the bodice of which was trimmed with passementerie and large bouquets of diamonds; three superb revieres around her neck and a diamond bow in her hair. Or, again, a white satin gown embroidered with pearls, rows of pearls around the neck, the bodice covered with pear-shaped pearls, ropes of pearls hanging at the waist, an aigrette to match in the hair—in fact, several fortunes in pearls.

ATTENTION is especially called to this lavish use of jewelry abroad, because there yet remains in the minds of some the idea that it is only American women who are again wearing jewelry *ad libitum*.

LEADING jewelers interviewed this month in behalf of THE CIRCULAR's readers, agree in stating that the necklace is throughout the length and breadth of our own land a fashionable and favorite ornament. The styles in necklaces, like most other articles of personal adornment, are exceedingly diverse. A pearl necklace of pleasing design seen, was formed of a link chain with a pearl alternating with each gold link, and at intervals of about two inches a rosette of pearls.

A NECKLACE may be but a string of pearls holding a pendant of diamonds, or it may cover the front of the bodice in close rows, beginning with a collar about the throat and coming down to the waist in festoons. Pendants are very fashionable and are usually worn with necklaces. In this connection it may be well to mention the fact that almost all the handsome brooches are so made as to be worn as pendants.

NEW YORK ladies continue to patronize the decorative hair pins

and little jeweled side combs, several times described in THE CIRCULAR. They are also affecting the jeweled aigrettes so much worn abroad. Diamond loop pins, also diamond rings are being worn in the hair with pleasing effect. Some of the newer hair pins represent large gold or silver feathers. The arrow, with or without a gem set in the center, is a popular design. There is no diminution in the use of gem-set butterflies and flowers in the hair.

* * * * * *

JEWELED hoops, the Marquise shape and the oblong cross setting, all appear in finger rings along with other well-known styles.

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THERE is good authority for saying that while solitaire ear rings are as desirable as ever and afford the correct style for fine stones of size, pendant ear rings are in fashion, especially when these are composed of two stones, as a small diamond at the ear with a colored gem of larger size beneath it. Cluster ear rings are gaining favor and so are the more elaborate gold ear rings. Sapphires surrounded by pearls or diamonds afford desirable ear rings.

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IN ALL gold ear rings have appeared some fanciful and realistic designs, such as tiny bells, little pitchers and acorns, miniature bird cages, wicker baskets and the like.

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THE bracelets that best satisfy the exclusive fine trade are quite the reverse of massive; indeed, it may be said they are narrow and somewhat delicate in construction. Fashion favors both flexible and stiff bracelets; one style is as correct as is the other. Bracelets of curb links, plain or chased, are in demand; the knife-edge bracelet, set with a row of pearls or diamonds, remains in favor, and fine flexible curb chains set with precious stones are admired. Gold bracelets about half an inch wide in filigree work, with and without precious stones, are much worn, so are quite plain ones, both flat and round. These latter are sometimes worn in pairs, one being dead colored and the other bright, and neither more than a quarter of an inch wide.

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A BANGLE of gold wire set with a brilliant cluster, having a pearl or sapphire center, furnishes a desirable ornament in way of bracelets.

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THE bracelet watches that originated in London, and which have been somewhat affected by tourists, have few, if any, merits beyond their novelty, and will hardly gain general recognition here. These bracelets are both stiff and flexible, the dial of the watch appearing on top of the wrist in place of a medallion or other ornament.

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FLOWER pins have acquired a well-deserved popularity; indeed, in New York City there is no better selling article at the present time. Many of these pins are enameled in bright and beautiful tints, with pistils set with tiny gems. In these clever copies of nature are represented hot house, garden and field flowers with striking fidelity.

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IT HAS been intimated that during the campaign red and white roses will be the popular models in flower jewelry, not only for ladies'

brooches, but men's scarf pins as well. These pins will be not only decorative in effect, but, like other badges, proclaim, without the bother of explanation, just what its wearer's politics are.

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YOUNG girls are affecting the white enameled flowers, and frequently wear entire sets, including a brooch, ear rings, sprays for the corsage and one or two small pins to be used as one's dress happens to suggest. These pieces all match, that is, the same flower with its foliage is represented, only in different styles of development.

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LILLIES of the valley resting on broad leaves of green enamel, with a rose diamond in the heart of each flower, make effective brooches.

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A GROUP of three primroses, with a brilliant in the center of each flower, is one of the several forms of primrose brooches.

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THE thistle is being effectively represented in jewelry, both for brooches and bracelets. The lilac is also a favored model.

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WHILE the quite round brooch, that looks as if it had been cut out by machinery, does not find much favor, the brooch that inclines to round or oblong form, with an irregular and decorative border or finish, is well liked. In a general way it may be said, however, that the most popular of all brooches are the ones that represent some pleasing design, such as two or three garlands of forget-me-nots interlaced, a broad curving feather, a butterfly with spread wings or a crescent set with graduated stones.

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WHAT the English term jeweled safety pins, have found high favor here. These are of near kin to the old lace pin, but are shorter, and have the safety or nursery pin attachment. These pins are much used on lace and other translucent fabrics, in a word, they are wonderfully convenient adjuncts to a lady's toilet.

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FINGER rings are exceedingly popular with both sexes. Fine diamonds, rubies, pearls, emeralds or sapphires, mounted as a solitaire on a slender ring of gold, is the ring most highly coveted. Cluster rings are, however, in high favor, and this style provides an admirable setting for small colored stones of fine quality. The opal, by the by, figures largely in these cluster rings, and is usually surrounded by diamonds.

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COLORING jewels of all kinds are employed in rings that show pleasing designs, made of a combination stone setting, such as the three-band designs, each of a different stone and worn on one finger. The effect is often charming, as a combination of rubies, sapphires and diamonds.

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COLORING gems and semi-precious stones of pleasing hues are in as great demand as ever. Fine garnets have come to the front, spinels

are in favor and so are yellow topazes, jacinths and aquamarines. The opal is unquestionably gaining in public favor.

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TWISTED cord-like rings of gold and platinum, also of silver, for men's wear, were seen recently. There are also rings of gold wire on which are mounted single uncut stones of large size.

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THERE is nothing new to tell as regards the setting of fine stones. For the fashionable folk, these are still set low, with little or no gold showing.

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MME. ANDRE'S magnificent gift to the Société Philanthropique is an accomplished fact. Mme. André, as many of our readers probably remember, was once Mlle. Nellie Jacquemart, the celebrated portrait painter, one of the few women who have reaped the highest honors at the Paris Salon. Numbered with Mme. André's jewels, which it has been estimated are worth about £24,000, is a necklace composed of three strands of extremely fine pearls, secured by a clasp in which are set four large pearls, between a double row of brilliants. Then there is a combination piece termed a diadem-necklet (that serves two purposes), with four brooches *en suite* in rubies and diamonds. The collection is enriched with several remarkably large and beautiful emeralds. The finest specimen of the lot forms the center of an arrow, nearly five inches long, a blaze of brilliants setting off to perfection the one large green stone. There are also some remarkable black pearls in the collection. One especially fine one is in form a slightly elongated sphere, and mounted as a pendant for the neck. Another large black pearl is held between the claws of a winged griffin in diamonds, that may be worn as an ornament for the hair or the bodice. Half a dozen more pear-shaped black pearls represent the fruit on two olive branches. The above, it seems to me, furnishes several useful suggestions in regard to the grouping and setting of stones, which may be carried out in far less costly affairs than the ones described.

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LADIES may carry watches in decorative cases, but men, as a rule, affect the severely plain cases, though there appears occasionally some ornamentation on the dial of men's watches.

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THE Queen continues to lead among watch chains for ladies, but the short single chain is considered good form and many like it. Abroad, ladies are wearing, to some extent, a longer chain, to the pendant end of which are attached a number of charms.

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MEN in New York wear both the single vest and the double or Dickens' chain. There appears to be among what are termed the best dressers, a preference for the short single chain.

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QUITE a new idea in linked cuff buttons are the ones that simulate dumb bells, the balls being represented by pearls.

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LITTLE egg-shaped charms are much worn, both on Queen chains

and bangles. Sometimes these charms are all gold, sometimes they are enameled and occasionally they are gem-set.

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INFANTS are again wearing bead necklaces to a limited extent. One sees now, among other jewelry provided for these little folk, a single strand of guinea gold beads, smooth amber or beads of fine coral.

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STUDS in sets of three and fastened together by a light gold chain—never entirely out of fashion—are being employed again for fastening infants dress waists; later on these same buttons are used for small boys' blouse waists. Many of these studs are plain gold ones, others are chased, while others still are set with small turquoises or tiny pearls.

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ALL sorts of pleasing fancies are expressed in the safety pins provided for fastening down the baby's bib. These pins, as a rule, run in size about like the old cuff pin; some are plain bars of gold, many are enameled, while not a few are set with small turquoises.

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NUMBERED with articles suitable as gifts at christening parties, are puff boxes of *repoussé* silver, porringer sets of silver or gold, the name cup and the sets of flat ware in silver, including knife, fork, spoon and napkin ring.

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THEN there are rattles of ivory with silver bells, and all silver rattles with ivory rings.

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A RECENT comer in polite life is the jeweled shoe buckle to wear on low shoes. Then there are less costly affairs for the same purpose in form of silver clamps and gold scrolls, that act as tie fasteners to the shoes in addition to being an ornament.

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NEW patterns in silver belts imitate in their finish the markings of alligator skin. Other new belts are of leather, joined together at the sides with heavy silver rings, and fastened in front by Norweigen silver buckles.

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A NEW opera glass bag has made its appearance. The body of the bag is really an open work silver basket lined with silk plush, which comes up above this basket and is gathered at the top on a silken draw string.

ELSIE BEE.

Native American Gems.

AT THE last meeting of the New York Academy of Sciences Mr. George F. Kunz exhibited some of the finest red corundum (ruby) from within twenty miles of Atlanta, Ga. This was in pieces weighing one pound, and was part of a mass weighing 350 pounds, which was found on the surface. He also exhibited gold quartz from Dutch Guiana; gold formerly found there only in placers

deposits, had been traced to the vein by a brother of the United States consul, Mr. Thomas Brown, and exhibited specimens said to have assayed \$450 to the ton. The mines are situated four miles from Paramaribo, and the ore is sent to the coast by natives who carry it on their heads in fifty pound bags, making two trips a day.

He also read a paper entitled "List of Diamonds found in the United States," which will be published later on by the society, and stated that, in reference to the diamond weighing $4\frac{1}{3}$ karats, exhibited and reported by him two months ago, as having been found near Morrow Station, thirteen miles south of Atlanta, Ga., that he had recently heard of a two karats stone which was brought to Mr. L. O. Stevens, of Atlanta, Ga., by a colored man who found it in his garden a few miles from the city, but who would not sell it or allow it to be sent north. It was imperfect and off colored.

Mr. Kunz also said that five years ago he had identified topaz for the first time in Maine, at Stoneham, and ever since then he had been on the lookout for the rare gems, phenacite, crystals of which he had the pleasure of showing on that evening. This was the first time it had ever been found in the United States outside of Colorado, where it was first discovered in 1882. In Maine a number of superb, light green and sherry-colored topaz crystals were found. They were several inches in length but of little gem value.



[FROM OUR SPECIAL CORRESPONDENT.]

LONDON, June 8, 1888.

It has been facetiously said that were it not for the weather, Englishmen would not know what to talk about when they accidentally meet. The remark may be true of all other Englishmen, but it is not true of jewelers. From a rather extensive acquaintance with them, I am able to say that as an initiatory topic of conversation, with jewelers, the weather takes quite a back place. The one idea which appears always present in the mind of a jeweler, is the state of business. The question one jeweler asks another—or for the matter of that asks any one else either—is always the same: How's trade? I have heard this asked some scores of times this very week and I fear I have myself added to the number of queries on the subject. To summarise the answers I have heard and received, I must say that our trade just now is very bad. Notwithstanding all the hopes we have entertained, the jewelry trade is in a most unsatisfactory condition. In some departments there has been rather more work done, but everywhere the report is that profits are remarkably small, where they exist at all. The volume of our trade has been increased by numbers of orders taken at ruinous prices. Large parcels are rare, and the smaller ones sold usually consist of so many patterns and at such low prices, that they cannot be remunerative. I am told by men who have passed a long lifetime in the trade that they never derived so little return from the capital they have invested, as they do now. These are the fortunate manufacturers. Unhappily there are many who have lost their capital altogether. My personal experience does not go so far back as some of those I have referred to, but I can fully confirm their opinions as applicable to the whole period with which I am acquainted. Manufacturers of jewelry are working under greater disadvantages than I have ever known them.

I confess that my estimate of the trade for this spring was altogether at fault. I anticipated a much better season and looking at

business generally as it appeared in January last, there was reason for the anticipation.

I have been referring to the legitimate gold and silversmiths' trade. There has been a little more life in the manufacture of the ever increasing varieties of imitation jewelry. There are some who decry this trade in cheap jewelry as detrimental to the manufacture of genuine articles. Under certain conditions imitations do injure the sale of originals in jewelry as in other productions. But there are circumstances under which there is no such injurious effect. It is too well known that the bulk of our population have not had for some time any money to spare for ornamental jewelry, and have been compelled by the depression which every one of us has felt to curtail their expenditure for even useful articles. It has meant just this, that since people have not been able to purchase gold and silver commodities, they must either buy imitations, or go without them altogether. My opinion is that the good imitations we have had will be found to have an ultimate good effect on the trade in genuine articles. The imitations keep alive the desire and liking for the originals. One illustration is said to be worth a dozen arguments; here is one: The most active branch of our trade at the present time is the gilt chain trade. Common custom has decided that every man with any claim to what is called respectability—and this includes all our middle class population and the better to-do portion of our artisans—must wear a gold Albert watch chain. Any foreigner looking round an assembly of business men in this, or any other of our cities, might easily be persuaded that the wearing of a gold watch chain was compulsory, so general is the practice. Now if the scarcity of money should induce any number of persons to adopt silk, hair, or other descriptions of watch guards, the custom may become so general as to be accepted. Whereas by the temporary substitution of a good imitation gold chain, the desire to possess the real article at the earliest moment is maintained; the custom of wearing gold chains is preserved, and the gold chain manufacturers in time derive their deferred benefit. As a rule cheap imitations are not produced until the expensive originals have had a good run, so that any harm that may accrue from their introduction in the first instance, is counterbalanced in the way I have described.

Having been out of town much since my last, I have not seen so much of our factories and warehouses, but I have had opportunities of seeing their productions in use, that I should not have had at home. I observe that tailor-made dress is finding more favor and even this little weakness of our ladies is likely to effect the wearing of jewelry. Stone ornamental jewelry is quite out of place on cloth costumes, or simple dress of any kind. Yet this style of dress requires relief, and so instead of diamonds and pearls there is a demand for artistic designs in gold, silver and platinum. Art is evidently taking the place of solid value—as far as appearances go I am glad of the change. Mere value in a lump, with little or no attempt at design, is not decoration. Jewelry need not be extravagantly expensive to be beautiful and attractive. I would rather see, I would much rather wear an inexpensive but tastefully designed article, than one of those hideous monstrosities we meet with, whose only recommendation is that it cost thirty pounds. Of course I would rather possess the latter than the former, because I could do good to myself and the cause of art by having the thing melted, purchasing something neat and appropriate, and far more ornamental and then applying part of the handsome balance that would remain to procuring articles of utility that I really require, and the remainder to charitable purposes.

I am not finding fault with the liberal expenditure of money for jewelry by those who can afford it, provided there is due regard to fitness in the article selected. But to see, as I have seen this week, a female without any pretension, to taste either in dress or language, bedecked with massive, ugly, but expensive gold decorations is repulsive in the extreme. I was grieved to see such an abundance of money accompanied by such a lack of taste. The fates were very kind to me, however, for within a very few minutes of my meeting

the portly dame I have described, I saw one of the prettiest and neatest little bonnet pins I have ever seen. That little pin in its modest but very real beauty was some compensation for what I had just endured. It was in the form of a sweet pea—enamelled in natural colors with a diamond for a dew drop on one of its petals. There is no doubt the accessories enhanced the effect of this little ornament, for it was most judiciously used—nevertheless it was an attractive design that any one could admire. Many varieties of pins for bonnets and hair are just now offered for sale—I fancy they are of French origin. I have not seen them in our English factories, but have met with some of them during a short absence from town—a novel hair pin is a three pronged one in Arabesque gold, or with small diamonds set in silver. Other kinds are of tortoise shell set with small diamonds. Smaller side combs seem to be worn in place of the larger ones. The larger combs are now made with a slanting back to admit of them being readily fixed at the side of a coil of hair, as they are now worn. These combs are mounted with a plain band of frosted gold.

I had intended to have said something about the manufacture of silver match boxes, snuff boxes, salts, and similar small articles. We have quite an abundance of them just at present, but my space is filled up.

The "old plate" trade is being well worked by some one. Old bowls and dishes seem to have been suddenly discovered to a most wonderful extent. Considering the rage for old silver bowls it is interesting to learn that some of the so called recent "discoveries" are old plates and covers that have been turned into bowls. It was pointed out to me that the hall mark on these curious "ancient" bowls is generally about the middle of the side. A little reflection would tell anyone that such is not exactly the place where an assay officer would have placed it. Before my next, I hope to have seen many of our principal electro-plate factories and also to have seen the Glasgow exhibition. I am told there is much to interest members of our trade at Glasgow. If there is you shall hear something about it.

VIGILANT.

Birmingham Letter.

[FROM OUR SPECIAL CORRESPONDENT.]

BIRMINGHAM, June 10, 1888.

☞ We have at the present time our usual influx of buyers from Canada. Mr. Levi, of Montreal, has been and left us. Mr. Schener, of Montreal, is here, also Mr. Davis, of L. Davis & Co., Montreal.

We have also Mr. Ellis of Toronto here buying patterns of those who will sell them.

Most of our Canadian friends are buying very fair quantities, especially of rings and gold chains; of seals and compasses they are buying very small quantities.

The Italian Exhibition which is being held in London is bringing a lot of orders to some makers of cheap class of jewelry. This is especially the case with those who make mosaic work, as the Italians are such poor workers in metal they cannot sell their own mosaic jewelry, but our jewelers make the mounts of various shapes, have them filled with mosaic, and sell them as Italian work.

This exhibition has given a grand stimulus to the trade in mosaic work; the makers of it report that the Italian workmen are so busy filling English brooch mounts that they are working all the hours they will, a most extraordinary thing for them, demanding higher wages. At the present time you see mosaic jewelry in almost every jeweler's shop, and in many of them some very fine inlaid clocks and photo-frames. In addition to the mosaic work, there are scent bottles in all shops, the glass part of which is no doubt Italian; these are all colors, shapes and sizes, many of them of bright blue or

yellow color, with a silver vein showing, being especially pretty; some, again, are all the colors imaginable, beautifully blended and running into one another. The usual retail price with silver Hall marked top, is from 3s. 6d. to 5s. 6d. each, according to size and finish.

In addition to the "Macaronees," as the Italian Exhibition is usually termed, there is also an Irish Exhibition being held in London. At this the jewelry sold is either bog oak or Conemarra marble. The former is carved almost exclusively in Dublin, but the latter is worked up principally in Birmingham. This marble is of a yellowish green color, but is usually stained darker, so as to bring it nearer to the emerald green color, the national color of Ireland. It is usually carved into harps, shamrock leaves and other Irish emblems, and mounted principally in silver as brooches, but occasionally as pins, solitaires, etc. Originally this marble only sold in Ireland, but during the present Irish agitation it is selling well in some parts of England, and one energetic traveler has just returned from a visit to the States, where he has been in order to introduce this marble, and seems well satisfied with his journey in all ways but one, and that was the trouble he had in getting his one bag of samples through your custom house.

The Board of Trade returns for May show a decided improvement, our exports being £3,000,000 in excess of the same month last year, of which about £300,000 has come from Birmingham and district. Of this, there is no doubt the jewelry trade has had its share, as the orders from both the Cape and Australia have been much better. Trade at the former place seems in a fair way to pull round, as according to all reports the country is much more settled, and their state of insolvency is rapidly drawing to a close.

Great efforts are being made by the wholesale houses to weed out the large number of shopkeepers in the trade who are insolvent and only kept going by help from their creditors; everywhere people are saying: "We are telling those customers who do not pay within a reasonable time, that we cannot send any more goods until their account is brought down to a reasonable limit." This means that many of them will have to become bankrupt, but there have been so many revelations during the last two years of men being insolvent for years and still carrying on business and getting worse into debt every week, in fact, digging one hole to fill another up.

The following facts will show you the opinion the general public hold of the state of the jewelry trade. The firm of S. Blanckensee Sons, one of the oldest firms, and certainly doing one of the largest businesses in the trade, determined to become a public limited liability company. Their proposed capital was to be £200,000, but in spite of hard work and looking up of all their creditors, there has only been about £33,000 subscribed; as a consequence, they have had to close several departments, and on their first balance sheet, just out, they show a dividend of five per cent., and ask permission of the shareholders to borrow money in order to get enough capital to carry on.

SOLITAIRE.

Denver Letter.

[FROM OUR SPECIAL CORRESPONDENT.]

DENVER, COLO., June 20, 1888.

Trade matters are not over lively just at present. Most of the dealers report a fair business, and several fashionable weddings have been the means of a good trade in solid silverware, diamonds and bric-a-brac. Mr. H. L. Chapin, the well-known Lawrence street jeweler, lately met with a curious and painful accident while dressing in his chamber; a wash bowl fell, and in breaking, one of the pieces cut an artery in his foot, which will be some time in healing. Mr. Chapin is on deck, but has to depend on crutches; a little time and patience will bring him on to his feet. Mr. Henry Bohm still catches his share of diamond customers; with such a clean little

store and handsome stock it would be strange if he didn't. Denver has one establishment which is certainly an exception to the general rule. I refer to the store of Mr. and Mrs. J. L. Rose, of Fifteenth street. Mrs. Rose is an accomplished watchmaker, and instead of managing the intricacies of the kitchen and chamber, prefers the work bench, and is equally at home, whether it is cleaning a watch or soldering a ring. Mr. Rose is very popular amongst the mountaineers, and is an expert with the rifle and trap. They do a very successful business.

Mr. Charles Roth, one of the old timers, and well known amongst the German trade, is in Europe purchasing diamonds for the fall trade. His store, newly re-fitted, is very attractive.

Mr. H. S. Porteous has been quite unfortunate with dishonest employees, and the latest catch was Mosely, the colored porter, who was detected in getting away with various articles. The "Diamond Palace," as his place is styled, is running quite a manufacturing business, spoons, forks and hollowware in solid silver, and medals, badges, and about everything in diamond mountings, being made on the premises.

One branch of the jewelry business that seems to flourish is the "humbug natural stone museum shop." Several are doing a flourishing business, and loads of cheap paste goods and imported German agates are sold to the unsuspecting tourist under the guise of Colorado stones. Of course they handle some genuine specimens, but most of the jewelry never saw the Rocky Mountains.

Quite an interest has been taken in the case of Max Emmanuel, the embezzling salesman, well known here in the past as Mr. Max Freund's representative, and since January, 1888, as Marx & Weiss' traveler.

The outlook for the fall trade is very encouraging.

Real estate is very firm and constantly advancing, and with the enormous growth of our mining and agricultural resources, the future of Denver is assured.

ROUGH DIAMOND.

Art and Industrial Schools.



FOR RICHARD, otherwise Benjamin Franklin, among his numerous proverbs, says: "Take care of the pence and the pounds will take care of themselves." A literal interpretation of this might result in making an individual wealthy, but we question the propriety of inculcating miserly habits for purely selfish purposes, and are very sure that if all persons carried out this idea, it would be bad for the community. We offer as a substitute for this stale proverb another: "Take

care of the boys and the men will take of themselves," and commend the paraphrase to the attention of the jewelry trade and the community in general. The boys of to-day will be the men of the future, and they are the ones who will carry forward the great works of education and civilization of public and private enterprise, in which the men of to-day are engaged. The education of the boys, and the girls too, for that matter, is a subject in which every intelligent person has a direct interest. Whether they shall become industrious and worthy men or tramps, vagabonds and scoundrels, is the question of the hour. To save them from a disreputable future, and the community from their depredations, it is necessary that they be instructed in useful employments, and since trade unions have, to a great extent, prohibited the instruction of boys in the mechanical arts and industries, some other means must be provided for giving them the instruction that is calculated to make them useful members of society.

We have frequently urged upon the trade the necessity for providing a training school for boys, where they could receive such technical education in arts, sciences and mechanics as would fit them to be intelligent and capable workmen, to fill the places of those who are soon to pass away. There is already a scarcity of good workmen in the various branches pertaining to the jewelry trade, but more especially in the science of horology, where there is the greatest demand. In practice, the general workman in the jewelry trade must be a watchmaker as well as a competent workman in other branches, and there is a scarcity of thoroughly good workmen in this line. Indeed, it is difficult to see where boys are to be trained to this work unless special schools for their instruction are established, for the trade unions have closed the shop doors in their faces to a great extent, while the manufacture of watches in the great factories gives little opportunity for young men to learn the science of watchmaking in its entirety. They are there employed to superintend machinery and have little opportunity for learning hand work.

In the absence of a national school for the education of boys to become watchmakers, several individuals have opened their shops as schools of instruction, and announce that they are willing to receive young men and give them thorough and practical instruction in watchmaking. These schools are the shops of practical workmen in the trade, which have been equipped with tools and appliances for the express purpose of giving instruction in the mechanical branches of the business. The private schools promise to serve a most excellent purpose and, indeed, it is claimed that some excellent workmen have already been turned out at these training schools. We desire to give to these all due credit for temporarily filling a gap that would otherwise be vacant, and trust that they will continue to re-

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For further information, Application Blanks for Membership, By-Laws, etc., Address
P. O. Box 3277. 170 Broadway, New York.

At the regular monthly meeting of the Executive Committee, held at their office June 8, there were present Vice-Presidents A. K. Sloan and Henry Hayes, J. B. Bowden, Chairman, and Messrs. White Lewis and Secretary Hodenpyl.

The following were admitted to membership: Root & Chamberlain, 18½ or 19 E. Main street, Marshalltown, Iowa; J. B. Bickle, Rochester, Minn.; Chas. F. Barker, Central City, Main street, Colo.; Dolle Bros., 348 W. Madison street, Chicago, Ill.; Joseph Loeb, 617½ Penn street, Reading, Pa.; Chas. C. Bliss, 126 Main street, Norwich, Conn.; Merrick, Walsh & Phelps, 511 and 513 N. 4th street, St. Louis, Mo.; Adolph J. Kroesing, 9½ S. Upper street, Lexington, Ky.; Benjamin Albricht, 730 Broadway, Brooklyn, N. Y.; Marselis & Dechert, 85 Van Houten street, Paterson, N. J.; Adam Vogt, 134 W. Market street, Louisville, Ky.; I. J. Frigault, Providence street, Taftville, Conn.

ceive a liberal patronage in the shape of boys to instruct. But what is really needed is a training school upon a much larger plan than it is possible for an individual workman to carry out. Not only is it desirable that boys should receive mechanical instruction in watch-making, but they need scientific instruction to go hand in hand with it, and artistic education should also be an accompaniment. Skill in drawing and designing is as necessary for a complete workman in the jewelry business as purely mechanical proficiency, and an eye trained to artistic work is a necessity to the obtaining of the best results.

We have just received a copy of the annual report of the trustees of the Cooper Union, of this city, that noble institution which the youths of this vicinity owe to the philanthropy and generosity of the late Peter Cooper. This report shows that the resources of the institution, great as they are, are totally inadequate to the demands made upon it, so greedy are the coming men and women to avail themselves of its advantages. These advantages are given to the poor but ambitious youths without cost, and to accommodate their necessities; night instruction is given to those who cannot spare the time to attend in the day. These schools are open to girls and boys, women and men, who desire to improve their condition by acquiring additional instruction. To indicate the avidity with which the poor accept the advantages offered by the Union, we extract from the report as follows: During 1887 there were 370,205 visitors to the free reading room and library; 616 persons applied for admission to the free art school for women, only about one-half of whom could be admitted; of these 175 received certificates of proficiency at the close of the year, which certificates suffice to enable them to find profitable employment when desired; there were 29 pupils admitted to the women's free class in phonography and typewriting, of whom 29 were granted certificates; in the free school of telegraphy for women there were 63 admitted and 45 received certificates; in the night school of science there were admitted 954, and 455 received certificates; in the free night school of art, there were 2,127 persons who took instruction, and 685 of these received certificates at the end of the year. In this school of art is taught perspective drawing, mechanical drawing, architectural drawing, drawing from casts, form drawing, decorative designing, ornamental free hand drawing, rudimentary free hand, and modelling in clay; all of which accomplishments are very desirable for workmen in the jewelry trade. The trustees announce that their facilities do not equal the demands made upon them, and that if they had double the amount of room and money at their disposal it could be advantageously employed. Applications for admission are so numerous that every place is filled, and recent applicants have little opportunity for admission for at least a year. We cite these facts to indicate how greedy are the youth of to-day to acquire practical technical training that will improve their condition and enable them to advance in the social scale. It is an indication that the public can interest itself in nothing of greater importance than in this matter of providing industrial training schools for the rising generation.



[FROM OUR SPECIAL CORRESPONDENT.]

ATLANTA, June 19 1888

This is surely a hot and dull month, not only in the jewelry line, but in every other line for the Southern States. The fact that the planters grow cotton only, and it is harvested late in the fall, makes money matters very close just now. The Southern people have not

the hay, apple, wheat and oat crops to draw from, for cotton is king, and a mighty monarch he is. He has almost "starved out" or suppressed all other farm products. I do not know why the people of the South cling to it with so much firmness, unless it is their love for that, that is old and staple, or a fear to venture out after new things. However, as it may be in regard to the agricultural products of this part of the country, one thing may be said that offers great encouragement to the people of the South and that is the great variety and abundance of mineral wealth. The South is poor, comparatively speaking now, but in a quarter of a century she will be the wealthiest part of the Union. Keep your eye on the South. The other day just a few miles from this city a diamond of much value was found, and has created considerable excitement. Several experts have examined the locality where it was found, and state that it is their opinion that there are rich diamond fields near the place. If this is true, and the finest experts say it is, Atlanta has a great future before her.

Of course the jeweler's trade has been dull this month; the dullness is not caused by any unnatural depression, but is due to the fact it is summer time when everything, except the cream has a slow sale here. All our merchants are preparing extensively for the fall trade. Some of them have gone to Europe to buy goods, others to California on pleasure and business trips; so while the actual sales may be light, work is going on that in the end will tell.

Mr. L. O. Stevens has gone to Europe to buy goods for the house of J. P. Stevens & Co.

The firm of Rodgers & Johnson, has been dissolved. It is succeeded by Rodgers & Rodgers. They are jobbers and are building up a good trade.

A. L. Delkin & Co., completed some time ago one hundred silver medals for the Fulton County Veteran Association. They are fine works of the jeweler's art and reflect great credit on this young and go-a-head house.

Mr. J. S. Doyle who made an assignment several weeks ago, was sold out by the sheriff last week. Mr. A. F. Rickert bought the entire stock, and is now selling it at auction. It is understood that he will move his store from 5 Whitehall to the Doyle Stand.

J. R. Watts & Co., have opened a retail and jobbing house recently at 44 Marietta street. These gentlemen came here from Kansas, and are genial, well up in their business, and have made friends rapidly. They have plenty of money and will no doubt do a fine business.

T. J. K.

Stern & Stern in New Quarters.



THE old and well known firm of Stern & Stern have recently removed from their old place of business, No. 6 Maiden Lane, to larger and more commodious quarters in the premises on the opposite side of the street, No. 13. This store will be recalled by the trade from the fact that it was occupied for years by the old firm of Giles, Wales & Co. For two years, however, it has remained unoccupied, having got into quite a dilapidated condition. Stern & Stern required better accommodations for their large and increasing business, and so leased No. 13, and thoroughly renovated the premises and refitted them to suit their own convenience. They occupy the entire store and basement, giving them two floors 25 by 100. The store floor has been finished and decorated in a tasteful manner, the floors and ceiling papered with light and attractive paper, and all the wood work being of light ash, including the desks and sales tables. These occupy one side of the room, behind which are the large and extensive new safes, made by Marvin & Co. These are furnished with all the modern improvements both for safety and convenience, and are painted in silver grey, giving them an especially attractive appearance. On the broad, open doors are the initials of the firm, and the word "Eclipse," which will be recog-

nized as the trade mark by which their watch cases are designated.

On first entering the store, one is confronted with a high, ornamental gilded railing, which encloses a space distinct from the rest of the store; this is the diamond room, where customers desiring to look at precious stones are taken, where they are free from disturbance. Ready access is had from this room to the safes, and a special safe in which the precious stones are kept. Back of the diamond room are the regular sales tables, ranged in front of the safes which contain a valuable stock of goods of every variety. In the rear of the store are the private offices, commodious, well lighted and ventilated, where the members of the firm retire for social or business chats with friends or customers.

Before entering the store, one cannot fail to be attracted by the elegant display of goods in the show window. This is large, trimmed with black broadcloth with velvet edges; at the sides mirrors are placed so as to reflect and duplicate the goods on exhibition. The firm are extensive dealers in diamond jewelry, and on opening in their new premises, made a display of diamond jewelry in their show window that was valued at over \$100,000. Each article lay in a very handsome case of light blue plush, and was so disposed as to produce a very rich effect. There were brooches, ear rings, lace pins, bracelets, finger rings, and in short, examples of every article of jewelry worn by ladies, all made up with precious stones, diamonds, rubies, pearls, sapphires, etc. One pair of ear drops consisted of two first water diamonds, perfectly matched, worth \$20,000; another pair was worth \$8,000, and the other articles were proportionately valuable. These choice gems, displayed in cases of uniform color and richness, made a most tempting display. While the firm deals largely in precious stones, goods of all other description are found in their carefully selected stock. The members are enterprising dealers, know what the trade requires, and undertake to supply the demand at the lowest market rates. Their new quarters, while giving them far greater facilities than they possessed before, are no greater than their requirements, but give them a much better opportunity to exhibit their goods. The location has been a fortunate one in the past for the occupants of the store, and there is every reason to believe that Stern & Stern will also there reap the reward of their enterprise and nobility.



[FROM OUR SPECIAL CORRESPONDENT.]

ATTLEBORO, June 16, 1888.

What a change! It seems as though some powerful magician had passed through our towns, and in place of the dull stagnation which was here a month ago there is now life and bustle of trade. There are two causes to assign this great change to. In the first place it is what, in a measure, always comes to the trade in this section at this season of the year, and in the second place, about all the shops which do "cheap" work are busy with campaign buttons and badges. This seems to be a great thing for the Attleboro jewelers; orders are coming in every day, and some of the shops are having all they can do.

ATTLEBORO.

Take the jewelry business out of this village and it would be like the play of Hamlet with Hamlet left out, and so with the commencement of life in the shops everybody is happy, and a pleasant, prosperous feeling predominates.

A town like this always offers great inducements for the "knights of the jimmy;" if they succeed in getting possession of the premises

they are well assured of quite a "swag." The latest event in this line happened Thursday night, June 14, when the large Marvin safe in the refining establishment of Barber & Burlingame was cracked by two masked burglars, and money, gold and silver to the amount of about \$1,150 was taken away. The watchman, a perfectly trustworthy man, and his son, a lad about 13 years of age, were surprised in the office, and with pistols at their heads ordered to keep quiet while the villains bound them. The tools used were a sledge with chisels and wedges, and a sorry looking sight that safe was when I saw it about 8 o'clock the next morning. After the men succeeded in getting what they were after they left, leaving the man and boy bound, and they did not get loose until about 5 o'clock in the morning. This is the hardest loss of this kind which any jeweler was ever obliged to suffer in this place, and it is to be hoped that the culprits will be brought to justice.

Cumming & Wexel are busy on campaign buttons. One of these is a button with the word Protection, and underneath the figures 1888. This is only one of many different styles which are being manufactured by the thousand every day.

Mr. D. H. Smith, one of the selectmen, has announced his intention of going out of the jewelry business. He probably finds the undertaking business, which he recently started, more profitable.

Mr. J. M. Bates, of the firm of Bates & Bacon, is reported to have bought a very valuable estate on one of the principal streets.

Mr. J. F. Ripley, the popular salesman for the firm of Watson, Newell & Co., and also a member of that firm, is now in the West. He started a week earlier to avoid the convention at Chicago.

Quite a number of the Attleboro jewelers are members of the Ancient and Honorable Artillery Association of Boston, and during the stay of their London guests they participated in the exercises.

Mr. Arthur Lincoln, who was reported to be on the road for C. A. Robinson & Co., is still with F. S. Draper & Co.

ATTLEBORO FALLS.

In making up a letter in regard to the jewelry interest of the Attleboros, this village should never be left out. Of course, it is not very large, but what there is of it counts.

The principal firm here is R. F. Simmons & Co. As I told you some time ago, the people in this vicinity like good horses, and Mr. Bob Simmons is one of the "people." He seems to know a good horse when he sees it; at any rate he knew what he was buying when three years ago he paid a small sum for Del Monte, for within a month he has been offered over \$10,000 for the animal. His best record is 2.22 1/4, made at Albany last week.

I was talking to Mr. J. G. Sweet, of this firm, this week about the outlook, and he said that he was afraid the sudden boom was unhealthy and the bottom would drop out of it very soon. His firm are doing a good business, but they generally do. By the way, that case of E. L. Cheever vs. J. L. Sweet *et al*, for malicious prosecution, comes before the Superior Court at New Bedford this month.

NORTH ATTLEBORO.

This town is the busiest one of its size in the State of Massachusetts. This may be a broad statement, but I think it can be proved, and if all reports are true there will be more life before there is less. The talk of a new line of railroad through this section, which will put this town on a direct road from Boston to New York has not been dropped, and the prospects are good for the plan to be carried out. If this is done Attleboro will have to get up and shake itself or be left in the lurch.

Business is booming here and nearly all the shops are trying to make up for lost time.

Some of the manufacturers found time to accept the invitation of Mr. M. Fitzgerald, of Providence, to dine with him at Field's Point

the 8th inst, and, of course, had a good time. I received tickets and invitation but was unable to attend.

Mr. J. E. Draper is making preparations for the building of a large and substantial mansion on Washington street.

Mr. Bugbee, of the firm of Bugbee & Niles, was largely instrumental in carrying out the exercises Memorial Day. This firm have been alive to the requirements of the trade and are now quite busy.

E. I. Franklin & Co. have received large orders and are quite busy.

H. D. Merritt & Co. are keeping busy.

Nearly all the firms have got salesmen in the West who are sending home a goodly number of orders.

PLAINVILLE.

Mr. Charles Bennett has taken Mr. Wilson Guild's place at Lincoln Bacon & Co.'s factory.

Mr. Corey, of the Plainville Stock Co., is in the West.

T. Lambert and W. A. Schofield have purchased the business of Schofield, Ashton & Co. Their firm name is Lambert & Schofield.

Mr. C. A. Whiting, of Wade, Davis & Co., is on the road meeting with good success.

MENDON.

Imposing Upon Good Nature.



HERE are a good many dealers who seek to take advantage of the jobbers by every possible means, and by virtue of patronage previously bestowed claim privileges or accommodation that they are not justly entitled to. The jobber, not caring to lose a customer that he has been selling to perhaps for years, and feeling inclined to do all in his power to accommodate his patrons, often yields to exactions that he recognizes are unjust, and that no liberal and just man would exact. For instance, the traveling representative of a jobbing house in this city, recently called on an old customer in a distant city but failed to interest him in the goods he showed to the usual extent. Finally the dealer said to him that he had certain old stock that he had bought of his house two or three years before that was unsalable, and offered to buy more goods only in consideration of his taking back the old stock and crediting his account with the full amount that he had paid for the articles. As the amount was not very great, the goods were taken back as suggested, and the jobber had to stand the loss attendant upon the depreciation in value of the goods instead of the dealer. The latter had evidently displayed bad judgment in buying of one line of goods more than his market could consume, and instead of disposing of them at some price, and pocketing the loss, he had held them till they were out of style and then virtually forced the jobber to take them back on pain of losing his trade in future. Jobbers are often used as cat's paws by the dealers who take advantage of the memorandum device to fill up their stocks for some special occasion, and thus secure a reputation for enterprise in their locality. After the occasion has passed, the goods are returned to the jobber in various stages of deterioration by reason of shop wear and transportation, and they must be sent to the factory to be restored to a good marketable condition. Such transactions are unworthy of reputable dealers, and tend to embarrass the trade very much. Of course, jobbers are to blame for permitting themselves to be imposed upon in such manner, but in these days of active competition no one is willing to lose even one customer if he can avoid it, even if it does involve him in a little expense and considerable annoyance.

Another means by which the jobbers are embarrassed is by dealers pleading the baby act when their bills become due, and, by all sorts of excuses, frivolous and otherwise, evade compliance with the posi-

tive terms of their agreements. One debtor will allege that his expenses have been unusually heavy, or that competition has destroyed his profits, some one thing and some another, to avoid meeting their obligations promptly as business men ought to do. But the most contemptible excuse we have heard of was given by a man who said to the collector who presented his account at the time specified, "Oh, your house is rich, and can afford to wait." The house might have been wealthy or it might have been struggling with business obligations that placed its solvency in peril; it was no affair of the debtor what its condition was, the matter was one that concerned his honor as a business man, not that of the house holding his obligation. This view of the subject did not present itself to him, however, and he was only anxious to devise some way of postponing payment of his honest dues, and to enable him to do this he was willing to plead the baby act, or jeopard his business credit. If a dealer is honest, and cannot pay his obligations when due, it is time for him to throw up the sponge, and tell his creditors why it is that he cannot pay. If he has shown himself worthy of consideration, he will receive nothing but kind treatment from his creditors; but if he has been one who has resorted to tricks and devices to evade his honest obligations he is likely to receive such treatment as he justly deserves.

There are no business men so tolerant as the jewelers, or so ready and even anxious to aid their customers in carrying on their business, but it too frequently happens that this toleration, instead of being appreciated, is taken advantage of by the debtor class in the trade. Because the goods handled are in the nature of luxuries, it is perhaps necessary that greater liberality should characterize the business than is found in other lines, but there is nothing in the conditions of the trade that calls for dishonesty or paltry meannesses that are only one degree removed from absolute dishonesty. In fact, most men would rather be robbed outright in a plain straightforward manner, than to be gouged and deceived by alleged friends. There is but one legitimate way to do business, and that is openly above board, in a frank and manly manner. Special pleadings and specious evasions of business obligations have no place in the transactions of men who are honest through and through.

Art Studies for Artisans.

One of the results following as a natural sequence the development of a School of American Art is the demand for an educational institution in which the principles of true artistic excellence in all the departments of productive labor can be taught. Ever since people began to believe that character was largely a result of the environment of the subject and that the happiness and moral and intellectual growth of a people were largely affected by their immediate surroundings, there has been a constantly increasing demand for beauty, harmony and nobility of expression in architecture and interior decoration, as well as in the finer arts. And among the best paid artisans in the country are those who have come here as graduates of the French and German art schools, and have devoted themselves to the production of original designs in all the varieties of manufactures that find a market in America and to interior decorations.

The people have learned that tapestries and window panes, tiles and cornices, brasses and tableware, furniture and candelabra, and all the great variety of things movable and fixed which form the environment of man in his daily life, exert influences upon him either for good or evil—either helpful or harmful. Out of the demand for æsthetic surroundings has grown a demand for artist-artisans, that is, for productive workmen in whom has been developed the utmost possible approach to perfection in artistic sentiment applicable to their trades. America has given liberal employment to all such artist artisans from abroad who have sought her shores, notwithstanding that about all the originality of design and expression

they ever possessed was drilled into them after their advent in this country. But as in architecture, so in all of the other arts productive, the demand for that perfection of artistic expression which requires the development of national sentiment and characteristics has put the seal of condemnation upon that which is purely adopted or copied from foreign schools, be it never so perfect in the land of its origin, and has approved of that only which is expressive of the rather indefinable but always recognizable combination of qualities that claim title as American art.

Of American artist artisans the number is exceedingly limited. Since the birth of the demand for æsthetic surroundings there has hardly been time for the growth of an American school to train such workers. The pioneers in this higher path of mechanical art are either productively and profitably employed in their various trades or are engaged as instructors in the few industrial art schools that exist at various points in the country. None of these schools is considered sufficiently comprehensive to meet the demand of the present emergency. The nearest approach to the ideal is the Metropolitan Museum of Art schools, which were developed to their present proficiency and standing by John Ward Stimson, an American graduate of l'Ecole des Beaux Arts of Paris and an alumnus of Yale, who took charge of the slender nucleus of thirty scholars in 1883 and within five years raised it to a thriving school of three hundred pupils and seventeen classes, each pursuing a different study. But this was done in the face of financial and factional difficulties that compelled the resignation of Mr. Stimson in January, since which time the school has made but little progress. The scholars, who were devotedly attached to Mr. Stimson, and who found in his untiring energy and unflagging enthusiasm a constant source of inspiration, for the most part still remain attached to the school, as much in deference to Mr. Stimson's wishes as in their own interest.

Since his resignation Mr. Stimson, on the advice and suggestion of a large number of professional friends and acquaintances who are alive to the naturally developed demand for such an institution, has been actively engaged in the attempt to establish in this city a university for artist artisans which shall deal as broadly and comprehensively with the problem presented as do any of the larger universities with the problems of intellectual training. In this he has received the zealous support and commendation of men and women in all the higher walks of life, among them the Rev. Dr. R. Heber Newton, the Rev. Dr. R. R. Booth, Prof. Felix Adler, Prof. Daniel C. Gilman, of Johns Hopkins University, President Cyrus Northrup, of the Minnesota University, R. W. Gilder, editor of the *Century Magazine*, Mrs. Jeannette E. Gilder, editress of the *Critic*, President C. F. Wingate of the Twilight Club, Clark Bell, Vice-President of the Palette Club, Dean A. W. Tyler, of the Training College, Prof. Andrew J. Rickoff, Louis E. Tiffany, E. C. Moore, Edward Greey, Augustus St. Gaudens, C. Wheeler, J. Alden Weir, William M. Chase, Frederick Dielman, F. S. Church, Frank Waller, C. Y. Turner, Thomas W. Dewing, Mary Bacon Martin, and C. B. Todd, besides a large number of business men and nearly all the scholars who were formerly under him at the Metropolitan Museum of Art schools.

To a *Times* reporter Mr. Stimson recently spoke with ardor of the project upon which he was engaged. "Beauty," said he, "is essentially a divine product of nature and its craving as truly a product of normal social evolution as that for truth in science or goodness in religion. Art is the study of beauty, and is therefore a principle and not a recipe, and should so be taught. It is interpretation, not incitation, and should be organic to us, not sporadic or borrowed. In order to be truly American it must represent American character, which is at once remarkably poetic and yet practical; it must be democratic, and permeate and appeal to the people; it must be comprehensive, being more than paint or clay. It is the principles and ideals in and before the paint or clay, and may and will penetrate and beautify all materials. My convictions being such, and believing them to be theoretically and historically sound,

I have endeavored to engraft them upon American educational systems as distinct from and in protest against the servile imitation and importation of foreigners. The little night classes of the Metropolitan Museum of Art gave me the opportunity to test these theories, and they were amply verified as correct and timely. Within three years the number of scholars rose from a mere handful to about four hundred, and the departments from three to sixteen. And this, too, under very disadvantageous conditions without proper materials or rooms or funds.

"But the trial was long enough and thorough enough to demonstrate beyond doubt the usefulness, feasibility, and necessity of such an institution. I have entertained the conviction that the people of New York city are ready and willing to assist me in establishing a university to be permanently located in this city, and to be called the New York University for Artist-Artisans. My desire is to make it in every sense a university, liberal, progressive and national, open alike to both sexes, and to both idealistic and realistic elements in 'artist-artisans,' being intended to affiliate and concentrate at the commercial capital artistic agencies hitherto fragmentary or alienated, and bring good art examples, principles, representative judgment and taste, and technical training within reach of the people, for the benefit of serious art students, art workers, and American art industries, combining creative taste with practical skill.

"I propose to establish as quickly as possible classes in color, composition, drawing, sculpture, architecture, wood carving, metal working, etching, illustration and engraving, interior and cabinet designing, stained glass, tiled work, ceramics, lace and weaving in the order in which the classes can be made up, and to extend them as the demand may require. Some 200 students have signified to me a desire to join such an institution as soon as it shall be started, thus giving an assurance of success from the outset, and producing an income of something like \$5,000 to begin with. I am quite confident that within a year both these figures would be at least doubled without very large increase in the expense of administration. I should suggest the government of the university by two boards, one to be called the Educational Board, and to consist of the President or Superintendent and Faculty, and the other to be called the Financial Board, and to be composed of the supporters of the institution, who shall have as many votes in determining the financial problems of the university as their subscriptions shall respectively be multiples of \$25, which amount will represent a share entitling the donor to a vote and to a year's tuition for himself or his substitute.

"There is no reason why New York should not have this eminently useful and influential school. The times are ripe for it. Even fragmentary and local efforts in this general direction have met with unexpected success. And now, for a grand practical movement toward nationality in art as epitomizing national feeling, sentiment and taste, New York is the proper center. As the first city in the Union she should take the initiative in this movement, as she would be the first to realize the immense benefit it would be to all her citizens. For beyond the practical benefits the course of training would confer upon the students, an inestimable good would be accomplished in the quiet influence of the entire university upon the masses of the people. It would arouse a new interest in their work in the minds and hearts of the workmen, dignify and ennoble labor, inculcate new ideas of art, and in a large measure popularize it and incite a noble ambition in the breast of every artisan to excel in his workmanship rather than in noisy and disturbing political agitation. In this direction alone the university would be worth its entire cost to the moneyed interests of the city. It would furthermore exert a highly moral and refining influence, for art is life and degradation is death, and where art enters degradation flies away.

"But the project must have financial backing. Fifty or sixty students and a small number of enthusiastic friends of the proposition have signified their interest by making voluntary subscriptions of from \$25 to \$500 each, mostly small ones, and aggregating only

about \$2,500; but this was without organized effort to secure the money necessary for the founding of the university. To start that on a proper and enduring basis the rich men of this community must come to the front, and with liberal donations. For \$40,000 proper and sufficient quarters could be obtained and the basis of a permanent university could be laid upon which the work could be carried forward for a year or two, and until the practicability and beneficence of the undertaking could be satisfactorily demonstrated to all, when I should hope that sufficient interest could be developed to provide an endowment which would place the university upon an enduring basis, free from all financial peril or concern. No nobler work could be done for this community by any of her financial princes than to establish this university, wherein the aspiring artisan could complete an education which will make him a living blessing to his community and a factor in the development of the new school of American art. I firmly believe that there are men among the many millionaires of New York City who, if they were to investigate this matter, would find that they could erect to their memory no more worthy or enduring monument than the endowment of this University for Artist-Artisans."

Some of Mr. Stimson's former students called upon him during the reporter's visit and joined heartily in commendation of the enterprise, assuring him that at least 200 students would join the institution if it should open in the fall, who will otherwise be lost entirely to New York or be compelled to give up their studies.

Mr. Stimson has many letters from American manufacturers—jewelers, art furniture manufacturers, and carpet and tapestry manufacturers—indorsing the general proposition, and assuring him of hearty support in case the university is established. Some of them have signified a desire to have their sons receive the training that such an institution would afford them and that is now only to be had in Europe, where only the artistic ideas of a foreign people, living under a different political, social and religious system, are to be acquired.—*N. Y. Times*.

The Industrial Arts of India.



FROM an elaborate volume bearing the above title, written by George C. M. Birdwood, C. S. I., of the South Kensington Museum, we extract the accompanying illustrations and descriptions thereof:

"Everywhere in Madras gold and silver, and indeed all the metals, are superbly wrought. Among the Prince of Wales presents (plate 1) is a shrine screen of old Madras pierced and hammered silver, which is a wonderful example of manipulative dexterity. Figure 2 is an example from the Prince's presents of Mysore gold dishes. Plate 3 is an example of unusual form of Cashmere work in parcel gilt and 'ruddy gold.' This 'ruddy gold' is used in India only in Cashmere, and outside India proper in Burmah. All over India elsewhere gold is stained deep yellow except in Sindh, where the goldsmiths and jewelers sometimes give it a singular and highly artistic tinge of olive brown."

The wild Thakurs and Katharis of Matheran, and the Western Ghats of Bombay, wear grass collars, necklaces, bracelets, anklets and girdles in exact imitation of the gold jewelry of thick gold wire, twisted into girdles and other ornaments of the same kind, which have, from time immemorial, been worn all over India. These gold collars were also worn by the ancient European nations, especially the Gauls, and called by them *torque*. The Burmese manufacture a peculiar necklace, the style of which is identical with the Matheran necklaces of twisted and knotted grass; they sometimes consist of tubular beads of gold strung together and pendant from a chain which goes around the neck, the strings of tubular beads of gold hang down

in front, like a golden veil. At other times the gold is fashioned into flowers or replaced by strings of pearls and gems.

The women in the wilder parts of India, where the heat is very excessive, frequently dispense with clothes altogether, and wear the fig-leaf of Eve's days; the wealthier class have it of silver, but all preserve the heart shape of the leaf, no matter of what metal it is made.

Cashmere and the Punjab manufacture the finest gemmed and enameled jewelry in India, the Aryan type of which extends to Delhi and Central India, and, in debased imitations, is to be found throughout Bengal. It consists of aigrettes and other ornaments for the head, tires which hang over the forehead, ear rings and ear chains, and studs in imitations of flowers, and of tablets of gold set with precious stones, strung together by short strings of mixed pearls and turquoises, with a large pendant suspended from the middle, gemmed in front, and exquisitely enameled, like all the rest of this necklace or rather collar.

The jewelry of Sindh and Beluchistan is similar to that of the Punjab, but is usually found only in its more primitive gold and silver forms. Solid silver *torques*, anklets and bracelets are very common, of a severe style of rectangular construction and ornamentation.

The silver filigree work here illustrated in which the people of Cuttack in Orissa have attained such surprising skill and delicacy, is identical in character with that of Arabia, Malta, Genoa, Norway, Sweden and Denmark, and with the filigree work of ancient Greece, Byzantium and Etruria, and was probably carried into the West by the Phœnicians and Arabs, and into Scandinavia by the Normans, and, in the course also of the mediæval trade, into Turkestan and Russia. In Cuttack the work is generally done by boys, whose sensitive fingers and keener sight enables them to put the fine silver threads together with the necessary rapidity and accuracy. It is quite distinct in character from the indigenous silver jewelry of the country, as will be seen from the illustration given.

Various districts of Bengal also manufacture gold and silver filigree work of great excellence, as well as gold and silver jewelry of all kinds, such as rosaries, bracelets, necklaces, etc., together with silver jewelry. That of Dinajpur is of highly interesting primitive forms. The Indian jewelers in general are so skilful at imitating that they can copy a given article so faithfully that it cannot be distinguished from the original. This trait is well recognized, and plays have been written, the plots of which turn on this skill.

The Mahommedans and Parsees of the Bombay Presidency abstain from intermarriage with the Hindoos, and even have ornaments peculiar to themselves—the Mahommedans in the Mogul style of India, and the Parsees of the traditional forms of the Sassanian period in Persia, but wrought by Hindoo jewelers. Unfortunately, being an energetic, advancing people, the Parsees have, during the last fifty years, begun to give up this national jewelry in favor of the fashionable jewelry of Europe. The *repoussé* gold jewelry of Sawantwadi met in mythological designs, is the best in Western India.

We come next to the Madras Presidency, where we find superbly made gold and silver ornaments; several villages are renowned for their manufacture; all their styles are in the mythological designs, characteristic of Southern India. European taste has, in great part, corrupted various designs, but nothing can excel the technical excellence of the rose chains, and heart pattern necklaces and bracelets made in Trichinopoly, of which we give a cut; silver filigree work of the best description is produced by the jewelers of various villages.

When the Prince of Wales was in India he was presented with a few but exceedingly choice specimens of jewelry, which are to be seen in his collection. The diamonds are particularly interesting. The Hindoos value diamonds in jewelry solely for their decorative effect, but they most extravagantly prize them for themselves as a sort of talisman, and particularly value them when the natural crystal is so perfect and clear that it only requires the cutter's art to have its natural facets polished. There are some fine Hindoo necklets of pearls



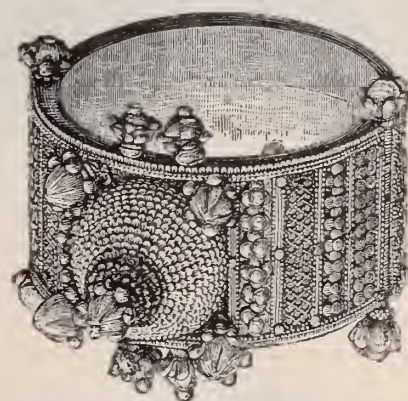
PIERCED AND REPOUSSE SILVER SHRINE SCREEN.
PLATE 1.



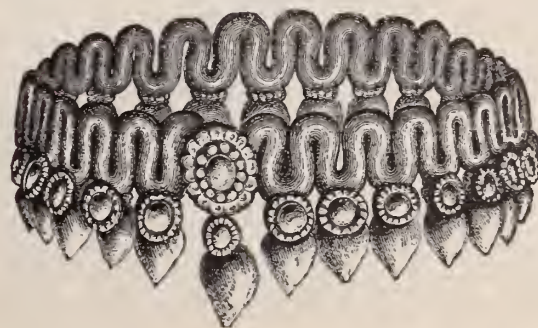
GOLD DISH.—PLATE 2.



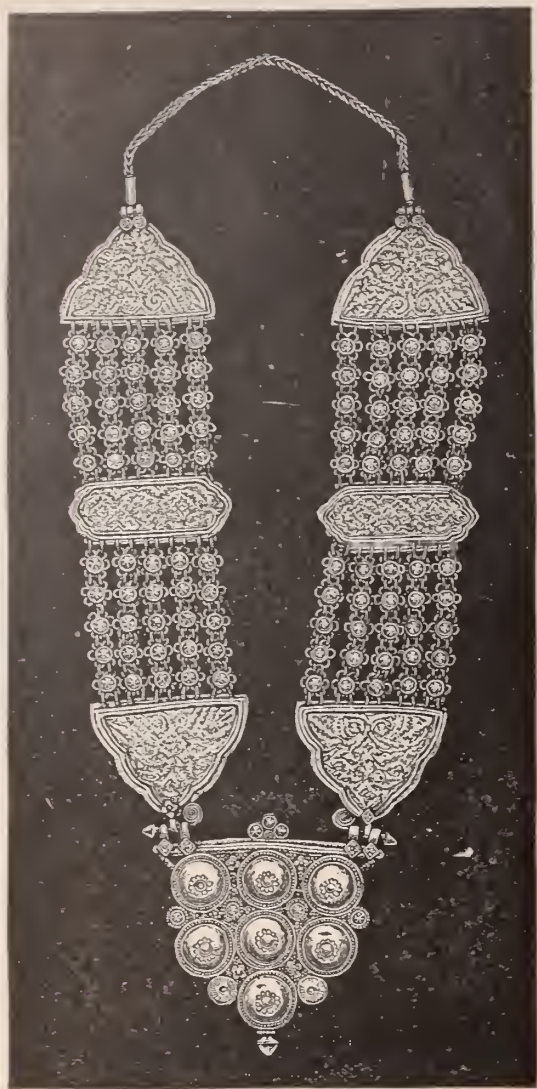
CHASED PARCEL GILT JUG.—PLATE 3.



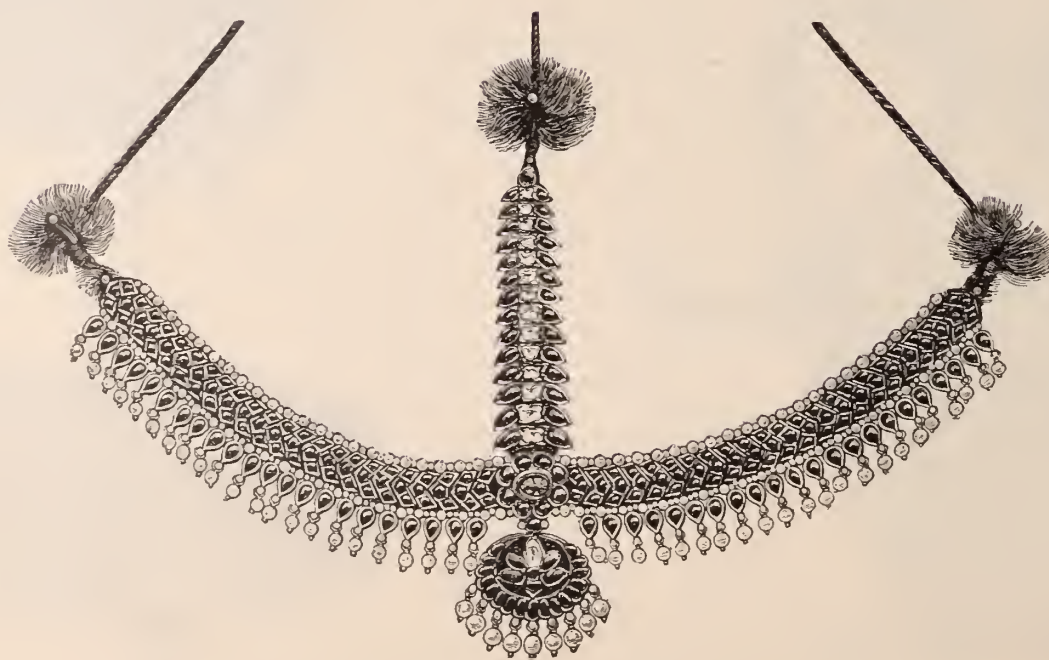
NATIVE SILVER JEWELRY OF CUTTACK.



PRIMITIVE SILVER JEWELRY OF DINAJPUR, BENGAL.



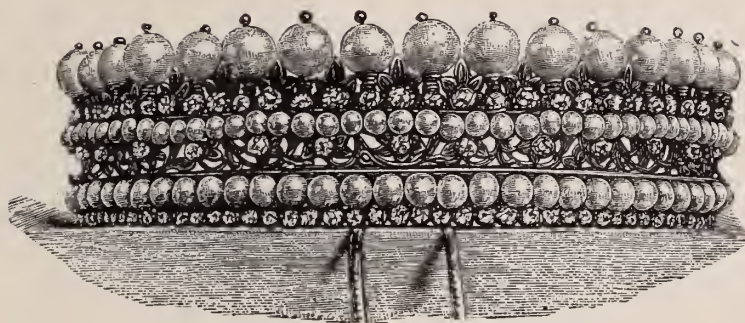
SILVER NECKLACE, SINDH.

NECKLACE OF GOLD AND PRECIOUS STONES,
FROM PUNJAB.

NATIVE JEWELRY OF TRICHINOPOLY, MADRAS.



SILVER NECK ORNAMENT, SINDH.



H. R. COMB OF PEARLS AND DIAMONDS SET IN ENAMELED GOLD, JAIPUR



NATIVE GOLD JEWELRY OF SWANTWARI, BOMBIAY.



SILVER FILIGREE JEWELRY OF CUTTACK.

and enamel, and "tallow drop" emeralds; and chains, bracelets and pendants starred with gems; but the loveliest jewel of all is a hair comb made at Jaipur. The setting is of emerald and ruby Jaipur enamels painted on gold, surmounted by a curved row, all on a level, of large pearls, each tipped with a green glass bead. Below these lovely pearls is a row of small brilliants, set among the elegantly designed green and red enameled gold leaves which support the pearls; then a row of small pearls with a brilliant-set enameled scroll running between it and a third row of pearls, below which is a continuous row of minute brilliants forming the lower edge of the comb, just above the gold prongs. It is superb in design, and one of the most finished pieces of Indian jewelry that has been made in modern times. The pearls are of very great price, and the whole effect is most brilliant, rich and refined.

We may have, perhaps, been somewhat prolix in the preceding history of the jeweler's art of India; we intended to simply speak of its exquisite filigree work, but found it impossible to separate the two branches of solid goldsmith's work and filigree, without being unjust to the other, and we will speak of its manufacture and treatment in our next.



[THE CIRCULAR is not responsible for the opinions or statements of contributors, but is willing to accord space to all who desire to write on subjects of interest to the jewelry trade. All communications must be accompanied by a responsible name as a guarantee of good faith. No attention will be paid to anonymous letters. Correspondence solicited.]

To the Editor of the Jewelers' Circular.

Thanks to Miss Elsie Bee for the article on window dressing. Hope she will give us country jewelers and opticians a big hint on personal attire, appearance, manner, art of showing goods to customers and how to sell them. It would stimulate us—make us appreciate her the more and redound to the good of *all* in the trade. None is better qualified than she to write on that subject—none has done so much to stimulate us save the late lamented Hopkinson.

Pennsylvania.

G. W. L.

THE KING COLLECTION IN THE METROPOLITAN MUSEUM.

To the Editor of the Jewelers' Circular:

In my remarks in your last issue on the death of the Rev. C. W. King, attention was called to the fact that the collection at the Metropolitan Museum was called the Johnston and not the King collection. Now, it is true that on the catalogues sold at the door, which may be old, the name Johnston collection appears; yet, on the case the label "King Collection" is properly placed.

In regard to the illustrations which accompany the article on the Fremy artificial rubies, the crystals there figured in the matrix measure over half an inch across, and no mention is made of the fact that these must be magnified about 50 diameters, M. Fremy himself stating in the article that the largest crystal he observed measured from one to two m. m.

GEORGE F. KUNZ.

THE CIRCULAR APPRECIATED.

C. F. Greenwood & Bro., Norfolk, Va., write: "We consider THE CIRCULAR almost indispensable."

To the Editor of the Jewelers' Circular:

Enclosed please find \$2, amount of one year's subscription to THE CIRCULAR. It gives us pleasure to be able to subscribe to a paper in which appears such a variety of useful information, and,

from a careful perusal of other journals, we believe that in no other like publication can be found its equal. Send also the monograms for 1887, as quoted in your paper.

Respectfully yours,

GEORGE B. HAWKES & CO.

West Gardner, Mass., June 5, 1888.

SATIN FINISHING SILVER.

To the Editor of the Jewelers' Circular:

Please find enclosed draft for \$2, for subscription of THE JEWELERS' CIRCULAR.

Please give receipt for satin finishing silver.

J. A. B.

Vinton, Ia., June 13, 1888.

[For a receipt for satin finishing silver, refer to back number of THE CIRCULAR. From an old number we clip the following:

"FROSTING SILVER.—To produce a frosted surface upon polished silver use cyanide of potassium with a brush; the silver must not be handled during the process, but be held between pieces of boxwood or lancewood. The proportion to be employed is one ounce of cyanide of potassium to one pint of water. Use diligent caution, however, since the stuff is very poisonous."—ED.]

BACK NUMBERS FOR SALE.

To the Editor of the Jewelers' Circular:

I have THE CIRCULAR from May, 1881, until May, 1887, that my husband took when alive. I wish to sell them, and write you to know if you will assist me. They are in good condition, nearly as nice as new. Will you please write me if you wish for them, and what they will bring. Thanking you much for the favor,

I am, respectfully,

MRS. M. P. G.

Amesbury, Mass., May 31, 1888.

A DIRECTORY WANTED.

To the Editor of the Jewelers' Circular:

Enclosed you will find postal note for \$2, for subscription. Can you inform me if there is published a directory of wholesale and manufacturing jewelers, and from whom can it be obtained.

S. S. H.

Massilon, Ohio, June 7, 1888.

[E. L. Denison & Co., Providence, R. I., issue a directory such as you mention.—ED.]

OXIDIZING SILVER.

To the Editor of the Jewelers' Circular:

Will you please give me a receipt for oxidizing silver, and oblige,

Yours, respectfully,

H. G. P.

New York, June 10, 1888.

[A receipt by Mr. G. E. Gee, published in THE CIRCULAR in 1882, says:

"OXIDIZING SILVER.—A beautiful deep black color, possessing great luster, may be given to finished silver work, by boiling it in the following preparation for some time:—Bromide, 5 grs.; bromide of potassium, 5 dwts.; water, 10 oz. The boiling should be effected in a stoneware pipkin, and generally two to five minutes will suffice for the purpose. The work is finished after the proper color has been attained, by well rubbing with a soft piece of wash-leather and a little best jeweler's rouge. It is better to make the work as bright as possible before submitting it to this mixture; for this reason it is preferable to thoroughly buff all plain surfaces on a piece of felt by the application of the lathe, as by that means a characteristic brightness is imparted." Another answer to your question is the following to a correspondent in these columns some time ago: "Apply hydrosulphate of ammonia with a brush, or dip the articles in it as may be desired. This can be used either hot or cold, or the following may be used: 2 oz. sulphate potassa, piece saltpeter about

the size of a hickory nut; dissolve in one pint of water, heat the liquid and either apply it with a brush or dip the article in. With one or the other of these preparations almost any effect in oxidizing can be produced.—ED.]



* A Complete History of Watch and Clock Making in America.

[By CHAS. S. CROSSMAN.]

Number Twenty-five.

Continued from page 39, June, 1888.

THE UNITED STATES WATCH COMPANY.—THE WALTHAM WATCH TOOL COMPANY.—THE MANHATTAN WATCH COMPANY.



THE UNITED STATES Watch Company, like many others, has had a somewhat varied career, for perhaps in one essential is unlike many in that it is, in a sense, the outcome of a small private enterprise. The business was first started in 1879 by Messrs. Nutting Brothers, on Crescent street, in Waltham, in the second story of a building used for other purposes. Both of the Nutting brothers had been employed in the machine shop of the Waltham factory for a number of years, and at this time concluded to start a shop for the manufacture of small watch machinery and tools, and met with

fair success in their endeavor.

In the summer of 1882 Mr. Chas. V. Woerd severed his connection with the Waltham factory, of which he was Superintendent, and joined himself to the Messrs. Nutting Brothers, and a new firm was organized under the name of the Waltham Watch Tool Company, with Mr. Woerd as General Manager and Superintendent.

The new firm pushed forward in the manufacture of tools, making a specialty of Mr. Woerd's patent automatic machinery, and as he has made his name famous along this line it may not be amiss to give a short sketch of his career in this connection. He is a native of Holland, having been born at Leyden, October 6, 1821. His father was a manufacturer of telescopes and electrical instruments, and the young man spent his early life in his father's employ. Finding the old world a little slow for one of his progressive ideas, he came to America in 1844 at the age of twenty-three. His first situation was in the machine shop of Seth Adams, in South Boston, Massachusetts. He remained there until 1853, and then took a position with Alvin Clark, the telescope maker, of Cambridge, which he held until he entered the machine shop of the watch factory at Waltham in 1857. When the Nashua Company started in 1859 he was among the number who went there to establish the new enterprise. He was first employed as a machinist and afterwards took charge of the train department of the factory. It was while here that he invented the epicycloidal machine, its purpose being to grind

circles of epicycloidal form on cutters for wheel and pinion teeth. Previous to his invention the form of the cutter was determined by the eye, which made absolute precision an impossibility. By Mr. Woerd's process of grinding the cutters the teeth of the train are now made mathematically correct. Mr. Woerd returned to Waltham when the Nashua Company was sold and removed there. He next distinguished himself by making some improvements in jewel making lathes, for which the company, as a token of merit, presented him with a purse of \$500 and a gold watch. He was soon after made assistant Superintendent of the Nashua department, of which, in 1864, he took entire charge. Soon after this he produced his automatic pinion cutter. He also invented many other labor-saving machines and devices of more or less value, and endeavored to bring up the standard of the watches produced in the Nashua department. Prominent among these improvements was the rack and pinion gauge for accurate measurement, and which came into general use in the factory. He also did much toward perfecting the process of hardening and tempering hairsprings. But probably what distinguished Mr. Woerd most in the horological world was the automatic screw machine which he invented for making watch screws. To show what the machine does, we will describe briefly the usual method of making screws. An ordinary lathe with a double slide rest carries two tools, one to turn the screw down for the thread part, the other for cutting the screw off when threaded. This lathe has a three spindle tail stock. One spindle carries a stock that gauges the length of the screw, another a die to cut the thread, and the third a cutter to form the screw point. In addition to this the head is then slotted by another process. Mr. Woerd's automatic machine does the work all at once, making a screw complete from the wire. One girl will attend to several, each turning out 3,500 screws per day.

In 1875 Mr. Woerd was made Superintendent of the entire Waltham factory, which position he held until the summer of 1882, when he severed his connection with the company, and after spending a few months in Europe he returned to Waltham, and entered into the business relations with Messrs. Nutting Bros. which we have just alluded to.

Mr. Woerd, however, soon conceived the idea of enlarging the plant to the proportions of a watch factory, and as his partners were agreeable to it work was commenced on the necessary tools and machinery. A capitalist was found in the person of Mr. E. C. Hammer, of Boston, who is at present Danish Consul. An organized company was the result in 1884, called "The United States Watch Company," of Waltham, with a capital of \$50,000.

Mr. T. B. Eaton, a business man, of Boston, but a resident of Waltham, also became a stockholder and was elected President. Mr. Hammer was Treasurer, and Mr. C. E. Edgecomb, a son-in-law of Mr. Woerd, was made clerk. The company immediately purchased a block of ground in the northwestern part of the city, and erected a brick building 25 by 100 feet, three stories and basement. It is really a very nice, snug little factory, and well equipped.

Now we come to the watch itself. It is an old but true axiom that silence is better than truth spoken without charity. Our duty ever calls us to speak truthfully, but we shall endeavor to do so with all charity. The watch the company started to make was designed by Mr. Woerd, and was a 16 size, three quarter plate, pillar movement, in 3 grades. It had a very wide mainspring barrel, and to make room for the center wheel to run over the barrel, the top plate, which was thinner than most watches have, was swedged up in the center similar to the cap of a full plate English watch is swedged up to make room for the balance wheel. It was dubbed the Dome Watch at the factory.

The train, which was first slow and then changed to quick, had round bottom teeth to the wheels. The fork was made of aluminum bronze, with a circular slot and square ruby pin. The balances at first were gold, but when the train was changed expansion balances were used. The stem wind, which was one of Mr. Woerd's patents,

was certainly an admirable one in many respects. It was a yoke with a loose intermediate stem winding wheel, and was pendant setting. The movement required a special case, which, of course, made it unpopular with the retail trade and it was dropped, or, in other words, died its natural death in November, 1887, at which time Mr. Woerd severed his connection with the company.

Some 3,000 movements of a low grade had been finished, which were subsequently "closed out." Upwards of \$200,000 had been spent in the enterprise, but results were far from gratifying.

Mr. Granville Nutting succeeded Mr. Woerd as Superintendent, and Mr. A. M. Saul came from Springfield, Mass., to take the position of master watchmaker. A new model for a 16 size movement, fitting Elgin cases, was designed and made, and work vigorously commenced on it at once. There are no special features about this movement. The idea being to dispense with them as far as possible. However, as the watches are only just being put on the market, a few words with reference to them may not be amiss, and help to dispel any prejudice that may have arisen to this company's production in the minds of our readers, as they have read the history of the first movement the company made.

The new movements are quick train, expansion balance, with usual form of lever escapement, three-quarter plate, pillar movement, with the same winding attachment as previously used, and which is certainly very desirable for a pendant set. So far the movements are all open face; a patent rack and pinion regulator is used. They are made in nine grades.

Should the performance of these watches prove to be as good in actual use as the workmanship and finish of those we examined would indicate, we predict a very successful future for this young, but hitherto unsuccessful company. They will also put an 18 size movement on the market soon. The factory will have a capacity of 50 watches per day when fully equipped. The operatives number 70 at present. The officers remain the same. The capital is incorporated at \$150,000.

MANHATTAN WATCH CO.

The name of this company and that of Mr. A. O. Jennings are almost inseparable, as what is now the Manhattan Watch Company has grown from what was once the conception of Mr. Jennings. This gentleman had previously held the position of manager of the Jerome Clock Company, and had obtained considerable experience in the line of horological manufacture, which, in a sense, fitted him for the position which he assumed in connection with the Manhattan Watch Company, which was organized in 1883 with a capital of \$100,000, and the following officers elected: A. O. Jennings, President; T. B. Jennings, Vice-President; F. L. Park, Treasurer. Mr. P. R. Jennings has since been elected to the office of Secretary, and Mr. R. G. Jennings appointed Superintendent. The factory is located at No. 158 Monroe street, New York City, and occupies the greater portion of a six story building. The machinery was bought on the start, but now the company have a very complete machine shop of their own, and are able to construct some of their own machinery.

This company make low price watches only, but make a full and complete line of them cased in all styles and qualities of cases, and sell them as complete watches only. The movements in all, however, are essentially the same, being 18 size, and come under the general head of full plate, although quite unlike the regular full plate American movements. The winding is quite different from that employed in most 18 size American watches, being one of the peculiar features of the watch, and is covered with patents in both the United States and Great Britain. They are made both hunting and open face, some of the latter being sweep seconds.

In 1886 they increased their capital to \$150,000, and removed their general office from No. 20 Park Place to their present location at 235 Broadway. They report a total production to date of 100,000 movements, with a present weekly output of about 1,000, and employ about 100 operatives. They sell direct to the retail trade.

Obituary.

MR. EZRA B. BOOTH, of Rochester, N. Y., died on June 16, aged 83 years. The deceased was born in Vergennes, Vt., January 4, 1805. He learned the watchmaker's trade and for some time lived in Middlebury, Vt., where he married. In 1838 he went to Rochester, and established a small watchmaker's stand on Main street. Later he entered into business with Erastus Cook. On the decease of his partner he bought a window in a toy store. Afterwards he conducted business in a little shop back of the arcade. Thirty-four years ago he bought out Brinsmaid's establishment on State street, where Powers' block now stands, and there he conducted a watch-making and jewelry business under the firm name of E. B. Booth & Sons until his death. During this time he made but one change in location, moving out for a short time while the Powers block was in course of construction. The deceased was a prominent temperance worker, being one of the founders of the order of Sons of Temperance in this city. For some time he was a member of the Third Presbyterian church, but he became a member of Plymouth church when that church was organized in 1856. The Rev. Myron Adams, his pastor, gave the following estimate of the character of the deceased: "Though Mr. Booth was always ready to support any church or charitable enterprise, he never held any church office and was always of a modest and retiring disposition. He was of solid worth and unapproachable integrity. His life was one of those which, while they make but little commotion and stir, and seldom attract public notice, make the world better and honester for having lived in it. A long and honorable business career won him the love and respect of all who had dealings with him." The surviving family consists of his wife and six children. The deceased retired from active business life about a year ago, but a day seldom passed that he did not visit the store until three weeks ago, when he began suffering from inflammation of the bladder, which resulted in fatal complications.

The English papers announce the death of Mr. Herman Bush, of Hull. In early life the deceased was a great traveler, not only in Europe, but also in the United States, Canada, etc. In 1872 he advocated technical education through the trade journals. He wrote many articles on metallurgy, the manufacture of jewelry, and other subjects for English, German, American and Swiss journals. He was in active correspondence with Grossman, Eppner and other leading horologists of the day. His services to the trade were handsomely acknowledged by the "Goldsmiths' Company," London. For many years Mr. Bush filled the office of Hon. Secretary to Hull Hebrew Congregation. His kindness of heart and zeal in all good works endeared him to a large circle of Christians and Jews.

THOMAS H. LOWE, for many years a gold plater in Providence, died on June 12th. Mr. Lowe is said to have been the originator of gold plating in this country, and all of the business in that line here sprang from him. He learned the business in Birmingham, England, where he was born in 1812, and whence he came to this country in 1848, at the age of 36 years. He had been in the gold jewelry line there from the age of nine years, and had carried on the business for himself there. When he came to Providence he entered the shop of G. & S. Owen, then on Steeple street, and while with them made a little of the English plate. From there he went with Munroe & Eddy, on Clifford street, and made "sweat" plate for them for two years. About the year 1850 he started in business for himself and made plate for the general trade. For two years he was on Page street, then moved to the Richardson Building, on Friendship street, where he remained until 1882. He then removed to John Austin's block, on Clifford street, and in September of that year retired from business, his son, Mr. Edwin Lowe, now a member of the Board of Aldermen, carrying on the establishment. Since retir

ing from business Mr. Lowe has been in good health until within two years when a cancerous tumor began to grow, and from it his death resulted. Mr. Lowe was perhaps as well known to the older jewelry trade as any one in the business, having supplied all the leading firms, not only in Providence, but in Attleboro, New York, Brooklyn and elsewhere for the past thirty years. His business and personal friends and acquaintances were many. He never aspired to public office or cared to enter public life, but was content to live simple and be known only as a business man. He left a handsome competence to his family as a result of his forty years of honest labor in this country. He leaves one son by his first wife and three daughters by his second wife, who died six years ago.

JOHN J. BARRETT, of North Attleboro, Mass., died on June 4th aged 43 years. Mr. Barrett was born at Warren, R. I., and was sent to work at the age of fourteen with a jeweler in that village. His family moved to North Attleboro shortly afterwards, and he went with them, and secured a situation with F. M. Whitney & Co. He afterwards became a stockholder in the Plainville Stock Company, but retired therefrom in 1883 on account of very poor health. He went to California under a physician's advice, and seemingly recovered after two years sojourn. But after he returned he began to fail. He was unmarried, and lived with his parents. He was a dutiful son, a fast friend, and his death is regretted deeply by a large circle of friends.

GUSTAVUS KREISMAN, aged 97, died recently at the residence of his daughter in Providence. He was born in Germany, and in early youth was apprenticed to a silversmith. He acquired a good knowledge of the business, but was obliged to join the Prussian army at the age of seventeen. He served with some distinction and rose to the rank of second lieutenant. He again worked at his trade after the wars were finished, in Hamburg, from whence he moved, in 1842, to London. In 1847 he came to America and opened a store in Toronto, Ontario. Two years later he went with the crowds of excited gold diggers to California, where he was successful and made a fortune. In 1854, he moved to Wilmington, N. C., where he kept a very prosperous store, which, with all his other property, was confiscated during the late civil war. He came to New York, penniless, and secured a situation in his trade. From 1867 to 1879 he kept store in Providence at the foot of Clifford street. His wife died in 1879, and he sold out and returned to Germany. There he worked at his trade until a few years ago, when he returned to Providence. Here he ended his long and eventful life, at the residence of one of his two daughters, who alone survive him.

MR. A. F. BURBANK, of Worcester, Mass., died at his home in that city recently after an illness of several months. Mr. Burbank was born in Bridgton, Me., October 6, 1821. He was a son of Col. John Burbank, formerly a successful merchant of Portland. As a young man entering the business world, he went to Manchester, N. H., where he remained long enough to thoroughly acquaint himself with the jewelry business, and in 1843 established himself in the business on Washington street, opposite Franklin street, Boston, where he was for many years one of the leading jewelers in that city. While out shooting, an accidental shot from his gun made a wound which impaired his health for a time and seemed to entirely change the course of his life. He sold out his business in Boston and remained out of all active business for a number of years. In 1871 he went to Worcester, where he had been interested in the business of his brother, Mr. A. L. Burbank. Six years ago he severed all complication with his brother's affairs and finally established himself in the business at the corner of Main and Exchange streets. A widow and two daughters, Mrs. Henry A. Wheeler and Mrs. Haverly B. Smart, survive him. He had many friends and was regarded as an estimable citizen and a good neighbor.

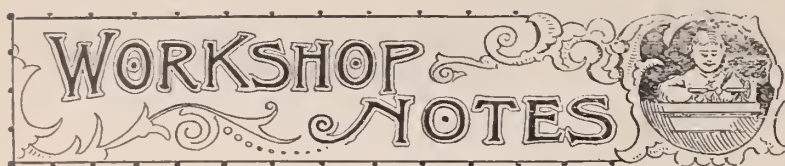


SAPPHIRE.—The most magnificent sapphire in the world is the property of a noble Russian family. It is over two inches in length, and an inch and a half wide, its color being a rich azure. It is perfect in form and water. This peerless gem was in the keeping of a Parisian jeweler some years ago, when the sum of one and one half millions of francs was offered for it by one of the Rothschilds, but the offer was refused. It is mounted as a brooch, and it is surrounded by large diamonds, a smaller sapphire similarly mounted being suspended from it as a pendant.

SIZE OF THE FIRST WATCH.—At first the watch was about the size of a dessert plate. It had weights, and was used as a "pocket clock." The earliest known use of the modern name occurs in the record of 1552, which mentions that Edward VI. had "one horum, or watch of iron, the likewise of iron Gilt, with two plummets of lead." The first watch may be readily supposed to have been of rude execution. The first improvement—the substituting of springs for weights—was in 1560. The earliest springs were not coiled but only straight pieces of steel. Early watches had only one hand, and being wound up twice a day, they could not be expected to keep the time nearer than fifteen or twenty minutes in twelve hours. The dials were of silver and brass; the case had no crystal, but opened at the back and front, and the watches were four or five inches in diameter. A plain watch cost more than \$1,500, and after one was ordered it took a year to make it.

THE SHAH'S GREAT WEALTH.—What the Shah of Persia terms his museum is a curious place. It contains a profusion of costly articles and objects of art such as exist nowhere else at the present day, it being the opinion of well informed Europeans, who have viewed these treasures, that their money value is perhaps twenty-fold that of the contents of the so-called Grüne Gewölbe (green vaults) of Dresden. It is impossible to give exact figures for they could only be obtained after a long and minute inspection and valuation by experts; but roughly estimated, it is probable that there is more than \$100,000,000 worth of jewelry, precious stones, coined and uncoined gold, costly *objets de vertu*, fine porcelain, and glassware, old weapons and armor, table wear and ornaments of exquisite Persian and Hindoo workmanship, etc. The so-called peacock throne (a part of the plunder Nadia Shah carried off from Delhi one hundred and fifty years ago), is alone valued at many millions, even after a number of the large, rough and uncut jewels have been broken, cut and stolen.

A CLOCK TO WORSHIP.—Among the most cherished belongings of the Queen of Portugal is a clock of rare interest, if not beauty. The godfather of Her Majesty was His Holiness the Pope Pius IX., who, though considering himself deeply insulted and ill-used by King Victor Emmanuel, was yet christian enough to take a paternal interest in the children of his opponent. All manner of means, direct and indirect, did the good pontiff use to keep alive the true faith in the hearts of the Savoy princes and princesses, and when the youngest girl of the family was married by proxy to the King of Portugal and about to start for an unknown country, her venerable godfather sent her as a bridal present a clock, with each hour indicated by the relic of some saint. Imagination can easily picture 1 o'clock as represented by a tooth of one of St. Ursula's Virgins, 2 o'clock by a couple of shreds from St. Cecilia's pocket handkerchief, and so on, through bits of bones, scraps of skulls, etc., till may be a dozen hairs from the beard of St. Simeon Stylites, marked the hour of 12. This unique timepiece must have been a source of comfort to the young Queen, who was not fifteen years old when she left her native land, and no doubt she often bent the knee before this agglomeration of saintly relics.



TO BRONZE STEEL.—Methylated spirits, one pint; gum shellac, four ounces; gum benzoine, half ounce. Set the bottle in a warm place and shake occasionally. When dissolved, decant the clear part for fine work and strain the dregs through muslin. Now, take four ounces powdered bronze green, varying the color with yellow ochre, red ochre or lampblack, as may be desired. Mix the bronze powder with above varnish in quantities to suit and apply to the work, after previous cleansing and warming the articles, giving them a second coat, and touching off with gold powder, if required, previous to varnishing.

THE FUSEE.—The fact that the fusee is of such value should serve as a stimulus to the invention of improvements in the going barrel, for there certainly are real objections to the ordinary form of the English watch, and a reliable going barrel, that secures an unequally uniform transmission of force, is much to be desired, as it would form a starting point for the designing of a new calliper. Many changes and more alterations have been proposed in the escapement on account of the variability in the motive force than from any other cause; but none of these have been permanently and completely successful as compared with a well constructed fusee and chain.

TO RECOVER GOLD, ETC.—In the process of coloring gold trinkets some of the gold will invariably be dissolved in the coloring bath, which should, therefore, never be thrown away, but different lots are to be poured together and then recover the gold in these baths. For this purpose do as follows: Dissolve a handful of sulphate of iron in boiling water; add this to your "colois;" it precipitates the small particles of gold. Then draw off the water, being very careful not to disturb the auriferous sediment at the bottom. You will now proceed to wash the sediment from all traces of acid with plenty of boiling water; it will require three or four separate washings, with sufficient time between each to allow the water to cool and the sediment to settle before pouring off the water. Then dry in an iron vessel by the fire, and finally fuse in a covered skittle pot with a flux.

OILING DETACHED LEVER.—It is a question frequently to the repairer whether he should oil the roller pin jewel or the fork—in fact, all the pieces of a detached lever escapement. To this we would say that the fork of the lever should never be oiled. If it is properly shaped and polished and of the proper size for the ruby pin which plays into it, no oil is required, and, if applied, it would do more harm than good. As for oiling the lever pallets and escape wheel teeth, it is considered a mark of poor workmanship to oil them in a fine watch, but in cheap movements it is often better to oil them than to let them run dry. Where it is a choice of evils, the workman may be allowed to do things which in other cases would be entirely inadmissible. But only a very little oil should be used in any case, just sufficient to lubricate the surface, but hardly enough to be perceptible with the eye-glass. When the escape wheel teeth run very close up under the lever fork above the pallets, particular care must be taken to avoid any surplus of oil, as it would soon gather dirt and clog the passing teeth.

INSERTING A BARREL HOOK.—There are several ways of putting a hook into the barrel, and each, doubtless, answers its purpose more or less. The following, however, is as good as any, and, beside this, enjoys the advantage of being the method I have followed for years and would not change for any other: Take a piece of soft steel

wire, file up about half an inch of it, not too taper, and tap in a hole one size larger than the one vacant in the barrel. After it is well threaded, leave enough to spare without being threaded, so that it can be caught in the slip tongs. When screwed home, cut off or file up to the size required for catching the spring inside the barrel and notch with screw head file to make proper hold for the spring. When all is ready insert the small end from the *inside* of the barrel, when you can catch with slip tongs and turn to your left, so that the wire will stop the hole and just leave enough for the spring to hold by. By doing this properly, I simply defy its being forced out by the breaking of the spring. The hook, in fact, ought to be finished in the screw plate all but cutting.

TO SEPARATE THE GILDING FROM BASE METALS.—It is necessary for this operation to first granulate, or in some other way reduce, the metal mixture into a comminuted state. When done, take, for each 500 parts, 80 parts saltpeter, 40 potash and 20 powdered white glass; first mix these ingredients by themselves, then stir them carefully with the granulated metal, put the whole into a new Hessian crucible, leaving about 3 centimeters (about $1\frac{1}{8}$ inches) space on top. Next reverse a somewhat smaller crucible over it, and lute it with cement in such a manner that the smaller crucible enters a trifle with its rim lower. Previously, perforate the bottom of the upper one with a hole about the size of a goose quill. When all this has been done, expose it at first to a gentle heat, which increase gradually until the crucible glows with a feeble red glow. Maintain it at this point for about 1 to $1\frac{1}{2}$ hours. You will soon hear how the mass works in the crucible, and a flame will issue from the upper hole burning like a candle. As long as this continues the crucible is to be kept at this temperature. When it has ceased, increase the fire in order to melt the matter in the crucible, and retain it about one-quarter of an hour in flux; then let the fire cool down until everything is cold. Lift out the crucible, break it, and you will find three layers, one above the other. The upper consists of the flux, the second is metal slag; the third is that of the precious metal, either fine gold or fine silver, alone, or, if both were contained in the mass, then both together. The upper two layers are with a hammer separated as closely as possible from the lower, and this is re-melted in another crucible. When in a flux (if the mass amounts to 500 parts), add little by little 40 parts saltpeter and 20 parts purified potash, well mixed previously. When well melted pour, and the precious metals will be found in a perfectly pure state.

THE BLOCKING OF A WATCH.—Watches will often be found which refuse to go when wound very tightly, but keep on running when the spring has run down a little. The trouble is not altogether due to the tight winding of the spring, but is the result of more than one trouble acting together and resulting in this blocking. If the spring is rough or rusty, the coils will bend so that they are bound in the barrel, or rub forcibly on the head, or the oil is thick and gummy, producing this blocking by winding tightly. This will not neutralize the expansive force of the spring, but it will so greatly check it that if the movement is in poor order and requires considerable motive force, it will be unable to run until the blocking of the spring has been eased up a little. Although such a stoppage is due to a combination of faults, yet in one sense it is caused by overwinding, since, if this had not been done, the other faults would not have prevented the watch from running—therefore, the overwinding may actually be blamed for this state of affairs. It is occasionally urged in favor of American watches that, having no stopwork, the spring is always coiled tight, and such a thing as stoppage by overwinding is unknown to them. This is very true—provided it is right in other respects, with a spring suited for it, and then no such an occurrence has come to the writer's notice; but the case is different when some botch has tinkered it up, when it will be found that they can and do stop by overwinding.



—Mr. E. Harris, of Harris & Shafer, Washington, D. C., sailed for Europe, June 6th.

—Mr. E. Bourquin, formerly of St. Imier, Switzerland, has opened up a store at Horton, Kansas.

—Mr. Daniel H. Smith, a veteran jewelry manufacturer of Attleboro, has gone into the undertaking business.

—Mr. Charles Alexander, formerly with Mr. A. G. Page, Jr., Bath, Me., is now with Mr. James W. Cusack, of Troy, N. Y.

—A. A. Harrington & Co., Mansfield, Mass., has been succeeded by C. D. Lyon & Co., who have resumed work with the old hands.

—Mr. W. B. Saunders, Huntington, Quebec, has bought out the interest of his brother J. W. Saunders, who has removed to Corry, Pa.

—The factory of the Elgin National Watch Co., at Elgin, Ill., suffered a loss of over a thousand window panes during a recent hail storm.

—Schlichting, Smith & Co., manufacturers of gold and silver cane heads, of Pearl street, were robbed of about \$500 worth of gold and silver ingots on June 4th.

—Mr. H. R. Hukins, formerly with Mr. Valentine, of Syracuse, N. Y., and afterwards with other important diamond houses in New York and Detroit, has returned to Syracuse and entered the house of C. S. Ball as a partner.

—Mr. George H. Ford, New Haven, recently sent out handsome invitations to his patrons to inspect his spring importations of precious stones, fancy goods, etc.

—T. & E. Dickinson, Buffalo, were recently robbed of a gold chain by the same thief who robbed the store of Mr. Jos. B. Mayer, in the same city on the same day.

—Mr. Wm. H. Barnet, of Newark, N. J., has retired from the jewelry business, and has bought an interest in the firm of T. J. Preston & Co., linseed oil dealers in Newark.

—The Jaccard Watch Co., has been incorporated at Kansas City, Mo., with a capital of \$50,000 for the purpose of retailing jewelry etc. This company is a connection of the Mermod & Jaccard Co., of St. Louis.

—The factory of the American Waltham Watch Co., at Waltham, Mass., will be closed from July 13th to August 1st. On June 1st this company had 2,565 names on their pay roll, the largest number at any one time.

—Brooklyn is a great watch case making city. Several large watch case companies have their shops there, employing many skilled workmen. Each shop has its social organizations which are just now active with summer picnics, excursions, etc.

—Mr. F. C. Sheldon, Shelbyville, Ind., has opened another store at Anniston, Ala., having as a partner, Mr. Chapman, a former watchmaker. Mr. Sheldon will continue his store at Shelbyville, and the firm name at Anniston is Chapman & Sheldon.

—The affairs of Eldin B. Hayden, of Brooklyn, who failed last month have been settled. The creditors will be paid in full in notes covering a period of seven years. The first dividend being 30% to be paid the first year, and the remainder of each claim in 10% dividends, one in each year.

—Rochester, N. Y. and Geneva, N. Y., send in dark rumors of mysterious gentlemen having visited these cities for the purpose of starting a watch factory boom. Further West these booms and rumors of booms are common, and it becomes more exciting to hear of them nearer at hand.

—A. A. Webster & Co., of Brooklyn, who for the past eighteen years kept a jewelry store at 241 Fulton street, recently disposed of their stock at auction, and have since opened up a very handsome store at 440 Fulton street. The new location is a good one, being in the best part of the "shopping" district. The store is fitted up in very handsome style, and the opening was largely attended by a fashionable throng.

—At the International Congress of Anthropologists, held at Columbia College, New York City, June 4 to 8, Mr. George F. Kunz, read a paper on two remarkable jadeite objects from Mexico. Giving a resume of this subject and calling attention to the additional evidence these objects give us of the use of this substance by the Aborigines, and later on by the Chinese and Burmese. Also exhibited a large piece of jade from the Yukon River where he said it had been discovered in place.

—The Barker Patent Gold Filled Thimbles, of which Mr. Josiah A. Whitman, of Providence, is the sole agent, have now been upon the market for ten years, and their popularity is well seen in the large demand that still continues. These thimbles are made in three qualities, 10, 12 and 14 karat, and in several varieties. The great merit claimed by the manufacturer is that the metal is of graduated thickness, and the thickest part of the thimble is at the spot where the most wear comes. Attention is called to Mr. Whitman's advertisement in this number.

—At the annual meeting of the stockholders of the Non-Magnetic Watch Co., of America, held at the company's office, Yonkers, N. Y., Saturday, June 16th, the following Board of Directors were elected: Henry W. Struss, Alfred C. Smith, Daniel E. Seybel, Theodore H. Silkman, David Ward, Louis Franke, and Chas. W. Ward. At a meeting of the Board of Directors, held immediately after the adjournment of the stockholders meeting, the following officers were elected: President, David Ward; Vice-President, Louis Franke; General Manager, Chas. W. Ward; Treasurer, H. W. Struss; Secretary, A. G. Smith. The report of the company's finances and general business, showed it to be in a very flourishing condition.

—W. E. White & Co., of Providence, have now ready for sale a new line of solderless bracelets, combining a new feature which they have patented June 1, 1888. The invention consists of a small connecting link, which forms at the same time a flexible and interchangeable connection and an ornamental link, a feature, the importance of which every dealer can only fully appreciate after they have seen it. In addition to the above they have also a large variety of their regular lines unusually attractive with new designs. These goods have already been infringed, which has caused Messrs. White & Co., to issue a circular to the trade announcing their determination to protect their interests. This firm anticipate, and are fully prepared for a large sale of these goods, of which they have a great variety of styles in gold plate and oxidized silver.

—The manufacturers of the "Princess" initial ring have made for that particular style of ring a name and reputation which is seldom attained by any mere pattern of jewelry. The name "Princess" was originated some years ago, and is applied solely to a ring with a raised initial upon a curved stone and set with diamonds. The name is a trade mark registered at the United States Patent Office, and is stamped inside the shank of every ring of this pattern made by the original manufacturers. Dealers are warned, therefore, that rings of this pattern, unless so stamped, are not genuine "Princess" rings. Other characteristics of this ring are the elegance of the old English letter carved patterns, of the shanks, the beauty of the finish and the rich color of the gold. The ring has been extensively advertised, and its excellence has led to its great popularity. All the leading jobbers sell it; dealers often order the "Princess" ring, and request that the name be stamped in it. This is superfluous now, however, as every ring is thus stamped. The "Princess" ring is well illustrated in the advertisement which appears in this issue.

—Nathaniel Barstow & Co. have removed to 198 Broadway.

—Shreve, Crump & Low, the well known Boston jewelry house, has been incorporated under the name of the Shreve, Crump & Low Company, with a capital of \$300,000.

—Mr. Charles Roe, Jr., for nearly twenty years with M. S. Smith & Co., Detroit, Mich., will take charge on July 1st of the Hodges House, Pontiac, Mich., a popular hotel.

—Mr. Dudley M. Mills, of the retail jewelry firm of Mills & Coleman, Grand street, died on June 2d, aged 74. Mr. Mills was well known and highly respected, and stood well in the trade.

—Mr. R. B. Lester, with Aiken, Lambert & Co., was married to Miss Ida M. Walker of Brooklyn, on June 14th. After the ceremony the newly married pair took a two weeks' trip to New England.

—Mr. Morris Adler was married June 7th to Miss Gertrude M. Mann, daughter of Mr. Moses Mann, a dry goods dealer, at the residence of the latter in New Haven. The wedding was largely attended.

—The firm of Ignomar, Goldsmith & Co. was dissolved on June 1st. Mr. A. Forsheim has retired, and Messrs. Ingomar and Fred. Goldsmith will continue under the old style at the same address, 20 Maiden Lane.

—The trade is almost evenly divided regarding the question of Saturday early closing, some closing at twelve o'clock and the rest at one. Very few houses will be open on that day after one during July and August.

—A new watch and jewelry incorporation, called The American Watch Association, has been formed at Chicago, with a capital of \$375,000. The incorporators are Messrs. C. F. Linscott, W. S. Coffman and J. F. Clapp.

—Atkinson Bros., of Philadelphia, have purchased the entire stock of the Essex Watch Case Co. of Newark, consisting of some \$30,000 worth of filled gold cases. They have also contracted with the case company to take its entire product.

—Mr. W. M. Cowan, Vice-President of the Whiting Manufacturing Co., has severed his active connection with that company, and assumed the Presidency of the Corliss Steam Engine Co., of Providence, R. I.

—The damages to the Hampden Watch Factory at Canton, Ohio, by a terrific storm late in May, did not interfere with the work of the company, and all the hands who were at the factory at that time have been busy at watchmaking. As soon as the damages are repaired the new hands will arrive, but meanwhile the work is progressing satisfactorily.

—The bankrupt firm of Schofield, Aston & Co., of Plainville, Mass., has been sold out and a new start has been made by book-keeper Lambert and Mr. Schofield, son of the former partner of the old firm, under the firm name and title of Lambert & Schofield. The business of the old firm will be continued by the concern, which occupies the same stand.

—J. E. Caldwell & Co., of Philadelphia, have won their suit against Louisa H. Lynde, the daughter the late Gen. Robert Patterson. Mrs. Lynde owed them \$3,758.32 for jewelry, and refused to pay for it. J. E. Caldwell & Co. sued for a judgment against her, and sought to attach her share in the principal of her father's estate, which she claimed could not be done. The Court decided in favor of Messrs. Caldwell.

—Barber & Burlingame, gold and silver refiners, near Attleboro, Mass., were robbed of refined precious metal and money to the value of about \$1,500 on the night of June 14th. Two masked men entered the shop and after a struggle bound and gagged the night watchman and his boy assistant. They then forced open the safe by means of powerful tools, and after having secured the entire contents, they laid the watchmen in comfortable positions, still bound, and left the building with their booty.

—Mr. B. Flaig, St. Paul, Minn., was robbed of all his stock on June 4th. The robbery occurred at noon, while Mr. Flaig was away for his lunch. The burglars made an entrance to the store by boring through the floor. Mr. Flaig has met with much sympathy from his many friends and neighbors in St. Paul, who are helping him pecuniarily to make a start again.

—Great excitement prevails in the neighborhood of Brown County, Indiana, on account of the discovery of gold there. A rich find was made one Sunday recently at a small village called Georgetown, and since then the farmers in that vicinity have gone into the mining business. Land cannot be bought for money, and the land along the Bean Blossom Creek, in Brown County, is said to be especially rich in mineral wealth.

—Mr. J. W. Barlow, the southern traveler for Wm. H. Robinson & Co., of Providence, is a very enterprising and active salesman. He carries a fine line of chain samples, and it is mostly to the excellence of these goods that his success is due. The words "Seamless Filled Chain" and the initials "Wm. H. R. & Co.," are now registered trade marks of Wm. H. Robinson & Co., as appears in our column of "Recent Patents."

—We desire to compliment the various firms occupying offices in the Dennison Building, 198 Broadway, on the handsome appearance of the front of their building. The entire structure has been remodeled interiorly, and is greatly improved. But the elegant signs on the front, and their striking and neat appearance, are a cause for congratulation for both the occupants and the proprietors. Maiden Lane has many signs as pretty as these, but few buildings have a set of them arranged so handsomely.

—B. & W. B. Smith, the well known manufacturers of artistic store fixtures, report a good business. They are at present engaged upon several large pieces of work for well known houses in the trade, which will be described when finished. The new style of show case, manufactured exclusively by this firm, with the frames or mouldings of $\frac{3}{8}$ to $\frac{1}{2}$ of an inch diameter, is attracting a good deal of attention. It forms a most attractive feature of the show case on account of the frail appearance of the frame, which in reality is very strong. These cases should be seen by the trade, as they are particularly suitable for the display of jewelry. Catalogues are sent out on application, but the illustrations therein hardly do justice to this handsome style of case.

—The trick of the pious individual or individuals claiming to be a priest, who was reported in these columns last month as having swindled several jewelry firms in Troy and Brooklyn, has successfully played his little game at Washington, D. C. Hardly had we got our June number through the press when we learned that a similar swindle to that in Brooklyn had occurred at the store of Mr. Charles Desio, of Washington, and the police even suspected it to be the work of the same swindler. It seems that two days before the swindle in Washington a man who said he was Father McCarty of Montreal, went to Father O'Donnell's and asked to board there a few days instead of going to a hotel. He was very devout, attending prayers assiduously. The next day he said his brother was going to call on him, and asked to be allowed to receive him in the parlor. When Mr. Desio's son, who delivered the diamonds arrived, he was shown into the parlor by the bogus priest, and no suspicion was aroused, as he was supposed to be the brother. Mr. Desio had been called upon by the bogus priest, who said he was Father McCarty of St. Aloysius', and, that as Father O'Donnell wished to present some diamonds to Cardinal Gibbons, he would like to have some sent to his house. Mr. Desio sent his son with \$700 worth of diamonds to Father O'Donnell's house, and was met there by the swindler, as related above, who requested him to be seated while he took the stones to show to his Superior. He disappeared out of the room and out of the house, and has not been seen since. Later in the day the Washington police arrested a genuine priest on suspicion, but soon found out their mistake.

—Among the dealers noticed in town since our last issue we note the following: D Oppenheimer, Baltimore, Md.; A. Bennett, Binghampton, N. Y.; Norton & Butters, W. Bigelow, R. Bachelder, Boston, Mass.; G. W. Fairchild, Bridgeport, Conn.; Mr. Wiesbauer, E. A. Gillett, Buffalo, N. Y.; J. E. Burr, Carbondale, Pa.; Benj. Allen, Chicago, Ill.; C. H. Duhme, Cincinnati, O.; J. Meckes, C. F. Uhl, L. Uhl, Cleveland, O.; H. H. Fanton, Danbury, Conn.; H. C. Brooks, Denver, Colo.; C. W. Bixler, Easton, Pa.; A. La France, Elmira, N. Y.; A. Jarecki, Erie, Pa.; H. C. Payne, Goshen, N. Y.; F. Hollister, Greenfield, Mass.; E. M. Chapman, Holyoke, Mass.; C. Ross Boas, Harrisburg, Pa.; F. Brooks, Ithaca, N. Y.; G. W. Hayes, Lewistown, Pa.; Mr. Silverthorn, Lynchburg, Va.; Ernest E. Müller, Malone, N. Y.; E. A. Fiedler, Milton, Pa.; N. Koch, New Orleans, La.; C. F. Greenwood, Norfolk, Va.; C. S. Raymond, Omaha, Neb.; W. J. Young, Petersburg, Va.; G. Dilworth, J. O. Stemons, Pittsburg, Pa.; C. E. Haywood, Potsdam, N. Y.; R. E. Macomber, Richmond, Va.; H. C. Cohn, Rochester, N. Y.; L. Hall, Skaneateles, N. Y.; Geo. W. Chatterton, Jr., Springfield, Ill.; W. F. Leonard, Tampa, Fla.; S. Tappin, Troy, N. Y.; M. W. Galt, Washington, D. C.; W. W. Scott, Watertown, N. Y.; George Honnett, Wilmington, N. C.

—Among the dealers who have returned from Europe since our last issue we note: Messrs. D. de Sola Mendes, R. A. Breidenbach, A. Ludeke, L. Hammel, Leopold Stern, of Stern Bros. & Co., Augustus Mathey, of Mathey Bros., Mathez & Co., W. S. P. Oskamp, of Cincinnati, C. C. Camerden, F. Errico, and F. C. Smith of Detroit.

—The following named dealers have sailed for Europe since our last issue: Messrs. D. Bloch, Isaac Smith, C. W. Schumann, Jr., F. S. Giles, August Becker, E. Holbrook, of the Gorham Mfg. Co., C. M. Turck, of Leyson & Turck, Butte City, Montana, H. C. Hardy, Charles Knapp, S. Saril, L. H. Keller, Joseph Muhr, Jacob Muhr, E. Harris, of Harris & Shafer, Washington, E. L. Anrich, C. H. Duhme, Cincinnati, J. W. Riglander, of L. Hammel & Co., George E. Fahys, Herbert Cockshaw, E. Ludeke, and C. W. Ward, of the Non-Magnetic Watch Co.

—The New Haven Clock Company is showing a handsome line of new patterns in clocks.

—The dial makers at the Elgin watch factory, during a recent hot spell, worked at night instead of through the day.

—Mr. Wm. L. Henkels, of Philadelphia, Pa., announces the dissolution, on June 27, of the partnership between Mr. C. J. Blackhurst and himself. Mr. Henkels will continue.

—The office of Frank M. Whiting & Co., at 17th street and Broadway, is now in readiness, with a line of samples of silver goods. The office is fitted up handsomely with large wall show cases.

—Messrs. C. F. and L. Uhl, of Cleveland, O., formerly of the firm of P. L. Miles & Co., will open a store on or about the first of July at 1 Euclid avenue, Cleveland, under the firm name of C. F. & L. Uhl.

—The Wiesbauer Mfg. Co., of Buffalo, is meeting with a large demand for their pretty little "Niagara Falls" paper jewelry boxes. The other lines of this house are intimated in their advertisement in this issue.

—Howard & Son have a notice in their advertisement this month regarding the suit against them for alleged infringement of a patent. They say that their customers need not fear the outcome of the suit, as they will take measures to defend them from any loss.

—Mr. Robert Shaefer, manufacturer of diamond mountings, has taken into partnership Mr. Edward Egenberger. The new firm has moved into the second floor of 69 Nassau street, corner of John street, where they have plenty of room and increased facilities for the dispatch of their increasing business. We heartily wish them the greatest success.

—R. F. Simmons & Co., the well-known manufacturers of plated chains, are in the market for the fall trade with a large variety of new patterns. The quality of these goods is highly spoken of, and every article guaranteed by the makers to give entire satisfaction.

—Attention is called to the handsome advertisement of the Gorham Mfg. Co. on page 18. The beautiful border design is drawn by an artist in the employ of the company, and reproductions of many notable art pieces produced at the factory are shown in the drawing.

—There is now a post office for every 1,000 men, women and children in the United States. If the expenses of carrying the mails were paid direct from the pockets of the people, pro rata, each citizen would pay an average of eighty-five cents a year for having his mail carried.

—E. Ira Richards & Co. ask the trade to "come and see their new line of goods for the fall trade." They claim "the largest line, best quality, nobbiest designs and lowest prices for such goods." They particularly desire to have their goods compared with any other line in the country.

—Robbins & Appleton announce a new line of 14 size watches just placed upon the market by the American Waltham Watch Co. There are four grades, all open face, $\frac{3}{4}$ plate and pendant setting. Attention is called to the illustrated advertisement upon another page referring to these watches.

—The Hartford Silver Plate Co. call particular attention to their solid steel No. 12 tableware. It is made of the best steel, and every piece is hand burnished and carefully inspected. Their goods are all put up with only half a dozen in a box, and a trial of the goods is expected to prove their high merit.

—The pedestal, tables and fancy ornaments in Mexican onyx, made by S. Klaber & Co., are now to be found in most of the large art stores. Dealers in this class of goods should visit the salesroom of this firm, at 47 West 42d street, where they will see as fine a line of art pieces in the two particular varieties of onyx controlled by Messrs. Klaber as can be seen anywhere.

—The New York Mineralogical Club has prepared a circular for its members and their friends, giving a programme of Saturday afternoon outings at nearby places. The points selected are of great interest to persons interested in mineralogy, and the trips are easy and convenient. Those for the days in July are, the old copper mine at Belleville, N. J., iron mines on Staten Island, Kingsbridge dolomite quarries and the trap quarries at Weehawken.

—Wade, Davis & Co. are meeting with good success with their popular line of goods. They make a large line of bar pins, brooches, drops, etc., in addition to their specialty of bracelets. Their garnet bracelets are particularly attractive, and with their "Coil" and "Success" bracelets their assortment has enabled them to "rake" in orders to a gratifying extent. Mr. Chas. A. Whiting, their representative, has returned from the West, feeling quite happy over the results of his trip.

—Hutchison & Huestis have a very striking advertisement in this issue, upon page 49, to which the attention of the reader is directed. As will be seen, this firm manufacture rings exclusively, and theirs is a handsome line. The patterns are very salable and the finish is excellent. The quality of the gold can always be depended upon, and the goods give entire satisfaction. These rings can be found in the stocks of the principal jobbers, and retailers will find them profitable to handle.

—Allegheny county, Pa., having recently completed a new courthouse, located in the City of Pittsburgh, it was necessary to supply the various offices therein with clocks. After numerous bids had been considered, the commissioners decided to purchase the self-winding clocks made by the American Manufacturing Supply Company, of this city. The order was placed through Mr. J. M. Kennedy, of Allegheny. Mr. Kennedy encountered much competition before the commissioners, but was finally successful in securing the order.

—An ordinary elephant produces 120 pounds of ivory, worth \$300. England consumes 650 tons (of which Sheffield one-third), for which it is necessary to kill 12,000 elephants yearly.

—Hancock, Becker & Co., are again prepared with a line of lace pins, ear drops, scarf pins, etc., in many new and handsome patterns. They make both plated and gold goods, and their line should be inspected before the rush begins.

—Harry Serodino, a Watchmaker in the employ of Gluck & Black, Birmingham, Ala., has gone off on a drunken spree, and his employers advertised for the return of two valuable watches which he had on his person for the purpose of regulating.

—The new furnaces in the hardening and annealing shop at the Elgin watch factory will use gas as a fuel, charcoal having been used heretofore. They are an improvement in many ways over the old, and will facilitate the tempering of the steel portions of the watch.

—There are four great accumulated masses of gold in the world: Two hundred and eighty-two million dollars in the United States treasury, \$237,000,000 in the National Bank of France, \$107,000,000 in the National Bank of Germany, and \$100,000,000 in the Bank of England.

—It is found that nearly every kind of glass, especially that containing manganese, is liable to a change of color by the action of sunlight, but can be restored to its original color by heat. Stained glass in windows that has changed tint through solar action can thus be restored by heat.

—The attention of any one desiring first-class work in wood engraving is called to the advertisement of Bookhout Bros., on the last page of this issue. We have had a large amount of work done by them for the columns of THE CIRCULAR, and have found them always prompt, and moderate in their charges.

—The new firm of Geo. B. Hawkes & Co., jewelers and opticians, West Gardner, Mass., is an enterprising concern. Mr. Hawkes is a finished optician. Mr. Chas. S. Harrington who was an apprentice of L. S. Stone & Co., of Springfield, Mass., is the jeweler of the firm. They are also agents for the Julius King Optical Co.

—The firm of Simons, Bro. & Co., of Philadelphia, expired by limitation on June 1st, owing to the death of George W. Simons and George W. Simons, Jr., and on the same day a new partnership was formed by Messrs. John F., Frederick M., and Edward S. Simons under the old style, to continue the business at the same stand, No. 618 Chestnut street.

—David F. Conover & Co., are endeavoring to dispose of their stock of Swiss watches. The stock consists of a line all of good makers, in gold, silver and nickel cases, and 16, 18 and 20 line movements. They are offered at greatly reduced prices previous to the summer stock taking. A list has been published, and will be sent to legitimate dealers on application.

—Mr. Alfred Anker, of Jersey City is missing, and a number of creditors, detectives and constables are on his track. He is charged with having given a check upon a bank where he had no funds, and several New York diamond dealers have let him have diamonds on memorandum. About \$4,000 is reported to be involved. It is expected he will soon be captured, as the detectives have clues to his whereabouts.

—The enterprising firm of J. T. Scott & Co., have recently been "housecleaning," and, as a consequence, have greatly improved the appearance of their store, at the same time the changes made have greatly increased their business facilities. They occupy the first floor and basement of No. 4 Maiden Lane, which is a large commodious store, which has just been beautified and improved by masons, carpenters, painters, and other workmen, making it more attractive, as well as more convenient. The firm have five travelers on the road, and is one of the best known in the trade.

—The Roy Watch Case Manufacturing Co. have introduced something very new in the watch case business, which we are inclined to think will prove a success. This is a decorated case, with a series of diamond decorated ornaments or monograms. The jeweler needs to have only one case of this kind in stock, as any one of the series of decorated ornaments, monograms, etc., can be placed in the shield of the case to suit the intending purchaser's taste. The trade should send for the explanatory circular to 3½ Maiden Lane, N. Y.

—The stock, lease and fixtures of N. Matson & Co., the insolvent Chicago jewelry house, were sold late in May to the trustees of the unsecured creditors for \$42,500. The store will be kept open under the manager of the former receiver, Mr. Edward Forman, for probably a year, and new goods may be sent to the store on consignment. The creditors expect to realize in this way, more than 50 per cent. of their claims. The \$8,000 judgment secured by the Gorham Mfg. Co. will be paid by the purchasers of the business.

—The firm of Davis & Galt, of 730 Sansom street, Philadelphia, composed of Messrs. J. H. Davis and Charles E. Galt, has recently been formed for the purpose of carrying on the business of manufacturing silversmiths. The members of this firm are well known to the trade, and are very competent in the branch of the business they have undertaken. Mr. Davis has been identified with the fine silverware trade of Philadelphia for ten years, and Mr. Galt was formerly of Galt Bros. & Co., of Washington, D. C. The specialty of this firm will be a high grade of artistic silverware, including fancy flat ware and hollow ware, fancy toilet articles, and especially some fine chased hollow ware.

CORNELIUS H. MILLER, formerly a member of the firm of H. D. Merritt & Co., died early last month at the Soldier's Home in Newark, N. J., aged forty-seven. Mr. Miller had been in the jewelry trade from his boyhood, and had a situation with H. D. Merritt & Co., where he showed himself active and industrious. He remained there until the war, when he enlisted, and served in many battles. After the war he again went with H. D. Merritt & Co. as clerk. In 1875 he and Mr. John Shepardson succeeded to the business and carried it on together until a few years ago, when Mr. Miller's health became poor. A few months ago he became an inmate of the Soldiers' home, where he died.

THOMAS M. HAWKINS, of Pawtuxet, R. I., died on June 8th, at the age of 74. Mr. Hawkins will be remembered by many of the older generation, he having been in the jewelry business for many years. He was born in 1814 in Providence, and when a young man was apprenticed to Godfrey & Sweet, remaining with that firm some years after the expiration of his apprenticeship. He was afterwards with Sackett, Davis & Co., and afterwards started into business himself with Mr. George Payton, now of Payton & Kelley. The firm was then Payton & Hawkins, and continued so until 1874, when Mr. Hawkins retired from active business. Mr. Hawkins had not enjoyed good health for several years, and the death of his second wife, only three weeks before his own, hastened his end. He was buried on June 11th.

—We have been much interested in an illustrated article printed in one of our contemporaries under the heading, "The Precious Metal Workers of Bombay and Central India." Indeed, we were especially interested in it when it first appeared, having been published in book form in 1880. The original book is called "Indian Arts, by Dr. Birdwood, C. S. I." In our April number we printed a selection from the book, with illustrations, duly credited to the author; in this issue we print other extracts and illustrations, also duly credited. Our first extracts from Dr. Birdwood's book were printed in THE CIRCULAR in 1883. We still possess the cuts which illustrated the articles, which we will be glad to sell our enterprising neighbor for one-half their original cost. It is good to know occasionally the source whence our contemporaries obtain their "original" articles, but it would be more creditable and honorable on their part if they would openly acknowledge the source of their "original" inspiration.

—Nearly two million American made watches were sold last year in the United States.

—Miss Mary C. Shaw, with M. Timpane, Troy, N. Y., sailed for Europe on June 21st, on the *State of Nebraska*. Miss Shaw is a hard and faithful worker, and her vacation is well earned. She will be gone a few months.

—There have been rumors from Chicago for some time past, that Tiffany & Co., the well known jewelers, would open up a branch store in that city. We have authority to contradict this rumor, and to say that Tiffany & Co. have no intention of opening any other store than that in Union Square this city.

—There is no truth in the rumor coming from Omaha, Neb., that the New York Standard Watch Company intend to remove their plant to that city; nor in another report from St. Paul, Minn., to the effect that the company wishes to remove to Minneapolis. Secretary Hallowes says that his company does not intend to change its plant from its present good location in Jersey City.

—The Jewelers' & Tradesmen's Company still continues to prosper and increase. The membership now numbers over five hundred and quite a number of new members is added at each meeting. Not a death has yet occurred in the membership. The trade is advised to read the advertisement of this company upon another page. Persons who are not members should join quickly, before the entire list of charter members is full.

—Lewis Bros., manufacturers of fine antique and modern silver goods, are now in the market with a handsome line for the fall season. An examination of their advertisement in this issue will give an idea of the various articles they make, and an examination of the goods will surely lead to a purchase of some of them. Lewis Bros., are a young and enterprising firm, and they are reaping the reward of their intelligent efforts in the direction of artistic work in silver.

—Nicholas Muller's Sons, manufacturers of artistic bronzes, clocks, statuettes, etc., formerly occupying a portion of the building at 117 Chambers street, have now taken the whole building. There are four stories. The ground floor is handsomely fitted up as a salesroom, and the arrangement of the stock is very pleasing. This firm has been engaged in the manufacture of bronze and metal goods for the past thirty years, and during that time has made great progress in artistic effects. The numerous new patterns in bronzes, side ornaments, etc., make a worthy display in the new show.

—The Riley & Osborn Manufacturing Company. Manufacturers of brass goods novelties, silver novelties, etc., are in the field again with their fall line. This year this concern have increased their line considerably, and have added many articles suitable exclusively for the jewelry and fancy goods trades. Onyx tables with brass mountings are a feature of the new line. Toilet sets of silver in plain and oxidized finish are made in many patterns. These are of the finest material and finish, and the prices are remarkably low. A glance at the advertisement of this company, on another page, gives an enumeration of most of the articles suitable for jewelers, who can make a profitable call at their salesroom 323 Broadway.

—The Spencer Optical Company, has issued in convenient form a little work by Dr. C. A. Bucklin, entitled, "The Detection and Correction of Visual Imperfections." The work is a very complete treatise on the human eye and its incidental defects, together with a scientific explanation of the proper method of treating such defects. It is intended for the use of those engaged in handling optical goods, and is designed to aid them in diagnosing the imperfect vision of their customers, so as to enable them to fit them with glasses that will be satisfactory. This is the most delicate and important work the dealers have to perform, and they cannot give satisfaction unless they thoroughly understand each case that comes before them. The price of this important publication is \$1.00, and no dealer in optical goods can afford to be without it. It can be obtained of THE JEWELERS' CIRCULAR PUBLISHING CO.

—Mr. T. B. Hagstoz, of Philadelphia, has succeeded to the entire management of the business of the Essex Watch Case Company, of Newark, N. J. He has also been made the president and treasurer of the company. Mr. Alexander Milne, the former president resigned the office, having several other large financial affairs to look after.

—Leon Apolant, a young traveling salesman for Pfaelzer Bros. & Co., Philadelphia, died recently at Hopkinsville, Ky., of heart disease. His body was sent to New York and buried at Cypress Hills Cemetery. The young man was well known, and his sudden death was a shock to his friends. He was engaged to be married, and his fiancée was almost heart broken.

—The Spencer Optical Company having outgrown its manufacturing facilities, heretofore located at Mt. Kisco, New York, have purchased a large property in Newark, N. J., on which stands a four story factory and several cottages, where they will hereafter manufacture their various products. The factory contains 18,000 square feet of floor room, and will comfortably accommodate 500 workmen. The company expects to be fully settled in the new quarters before the middle of the month, thus adding a new industry and a large force of skilled workmen to the already great manufacturing city of Newark. The company has a number of novelties in preparation for the fall trade, and in addition will have all the standard goods that have gained for it such an enviable reputation. Their facilities for producing and shipping goods are greatly increased by the change of location of the factory.

—A genuine old-fashioned robbery occurred to the jewelry store of Mr. William M. Strohl, of Bethlehem, Pa., on the night of June 15th. The amount of the loss is not great, as losses of this kind generally are, but it comprised nearly the entire stock, valued at over \$1,500, and is a very keen loss to Mr. Strohl. The thieves entered the store through a transom over the rear door, and worked uninterruptedly at the safe until they had taken everything of value. The discovery of the robbery was not made until the next morning, when the police were notified. No clue exists of the criminals excepting a faint suspicion offered by Mr. Strohl, who says he was visited a day or two before by a well dressed stranger, who represented himself as the agent of a safe company. He talked very glibly, and before he left made a slight examination of the safe, offering to sell Mr. Strohl a new one for the old one and \$80 to boot. This same man was also noticed in other parts of the town the same day, and two other suspicious characters were observed, and these clues will be followed by the police. It is to be hoped they may be captured.

—At one of the busiest retail corners of New York city, corner of University Place and Fourteenth street, stands the establishment of Simpson, Hall, Miller & Co., the well known silver plated ware house. The store has been entirely overhauled and remodelled, and fitted with new fixtures and furniture. The place would hardly be recognized as the same as that occupied by the company a few months ago. At the rear end of the store, the offices are elevated to about half the height of the ceiling, which, however, gives plenty of space overhead. The office gallery has a handsome railing in front, and from it a good view of the entire store can be had. Mr. Metcalfe, the new manager in charge of this branch of the company's business, says that the present exhibition at the salesrooms goes far ahead of anything ever before shown there, not only in the number and variety of the patterns, but also in the finish and design of the goods, and in the artistic arrangement of the beautiful fixtures. The window contains a large extension table, capable of holding an entire dinner set, when spread out to a length of eight feet. It can also be made much shorter, to hold a few fancy articles. This window is changed continually, and is one of the attractions of Fourteenth street. The interior of the store is very pleasant. Dempsey & Carroll, the noted society stationers, occupy a portion of the floor, and are not an objectionable tenant to the larger concern. Buyers of silver plated ware will do well to make a visit to the elegant store in New York, of Simpson, Hall, Miller & Co.

—Mr. Seth A. Rhodes, of Little Falls, N. Y., made an assignment on June 20 to Mr. Geo. F. Girvan, of the same village, giving preferences for about \$3,000. The liabilities or assets have not been ascertained.

—Some of the many friends of the late Frank N. Reeve, traveler for H. Elcox & Co., whose untimely death was recorded in these columns a short time ago, have contributed towards a present which was made to the mother of the deceased man. The present consisted of \$335 in cash, which was sent with a very warm note subscribed by seventy persons, expressing deep regret in the death of her son.

—"Hand Book for Old and Young Opticians," is the title of a new work on practical optics by W. Böhne, optician. It is a concise and comprehensive treatise on the theory of the optical trade and of its mechanical features by a practical man. The work is well illustrated, printed on good paper from large, clear type, and substantially bound. The necessity for all persons handling optical goods having sufficient knowledge of the optical science to enable them to adjust glasses intelligently, is becoming more and more apparent every day. Salesmen familiar with the work are in demand and command better salaries than those who do not. A practical hand book of the character of Mr. Böhne's will be a boon to many and invaluable to all who study it. It may be had on application to this office; price, \$2.50.

—A fourteen year old boy in the employ of the Adams Express Co., has recently been discovered in the act of stealing small express packages containing jewelry and other valuables. For a couple of months the company had been missing valuable packages without being able to discover where they had gone, and a thorough investigation resulted in finding the boy, who had only been in their employ but a short time, in the act of opening a package. The boy, when caught, confessed he had stolen all the missing packages, and said that he took nothing but money from those he had opened. He found but little money in the large number of packages he had opened, and as he rejected everything else because of his fear of discovery, he threw away several thousands of dollars worth of jewelry and other things of more or less value. He always threw the packages and their contents into the North River, and the express company recovered some valuable pieces with the aid of divers, but the company estimates its loss in the matter to be much over a thousand dollars, while the goods thrown away by the boy were probably worth much more.

—The *Pittsburg Dispatch*, of June 19, contains the following comments on the state of the jewelry trade: "Jobbers of jewelry report a healthy spring trade. There has been in the past two or three years very marked prosperity in the lines of this industry, and the year 1887 showed the largest volume of trade since the wholesale dealer entered upon his career. The holiday season of '87-'88 kept up the record, after which the expected lull occurred. After a short breathing spell the trade opened up briskly, and the volume of business thus far in 1888 has been fully equal to the corresponding months of 1887. The April trade showed an increased volume over 1st April, and May's business was full as good. The year's business for jewelry jobbers ends in July, and according to present indications the year which approaches its terminus will make the biggest record in volume of trade. Agents of New York jobbers consider Pittsburg their best field of operation. The wholesale dealers at home are gradually recovering the field occupied from time immemorial by New York houses, and it is only a question of time when Pittsburg will occupy its natural territory in this line, as the agents of jobbers here are pushing the trade through Ohio, Western Pennsylvania and West Virginia for all there is in it. An old time jobber of this city, G. B. Barrett, reports that the list published in *The Dispatch* a few weeks ago of business assessments, put his year's trade at \$30,000 below the facts. It should have been \$193,000 instead of \$163,000."

—The disclosure in the daily press of the doings of Max Emanuel a jeweler in Aspen, Colo., and the western traveling salesman for Marx & Weis, of this city, gives promise of another case of criminal proceedings. Emanuel, until four months ago, had been a traveler for Max Freund & Co., when he secured a situation with Marx & Weis. While on the road, it is reported that he got into evil ways, and lost money at gambling. To replenish his exhausted purse, it is alleged that he disposed of some of the goods of his employers, and accounted for them by sending in fictitious bills of sale. He also sold combination goods below the regular prices, and in this way the matter leaked out through a report to the New York Jobbers Association. Marx & Weis, when advised of the matter, took immediate steps to find out the exact state of affairs, and through their efforts he has been indicted for larceny, at Denver. Joseph Frankel's Sons secured an attachment against the Aspen store for \$3,100, which is about as much as the store is worth. Other firms are also interested. Marx & Weis loss is quite heavy, the amount originally put at \$20,000 will not cover their losses, but it is probable that they will recover some of their goods which have been pawned by Emanuel. This firm are members of the Safety Fund Society which insures them against any loss.

—The trial of Charles B. Franklin, of the firm of B. Franklin & Son, Troy, N. Y., who is charged with grand larceny in the second degree, lasted three days, and ended in a disagreement of the jury on the 11th of June. Our readers are familiar with the facts relating to the failure of the above-mentioned firm, and of the exciting escapade connected with the arrest of Mr. Franklin by New York detectives. The creditors of Franklin concluded that they would willingly lose the amount Franklin got out of them and proceed criminally against him. The prosecution was conducted by the District Attorney's office. The testimony before the jury was very damaging, but several witnesses were brought from Troy by the defense to prove Franklin's good character. This was amply rebutted by the prosecution, who flatly disproved many of his sworn statements, and it was thought the jury became muddled rather than enlightened by the voluminous evidence. The charge of the judge was also apt to produce dissension rather than harmony in the mind of an average jury. After a long debate, finding they could not agree, the jury were discharged. Another trial, either on the same indictment or on another which was obtained against Franklin, will be had shortly.

—The following story is taken from a Troy, N. Y., paper: "Billy Porter who, with 'Sheeny Mike' Kurtz, was accused of robbing the jewelry store of E. Marks & Son, in this city, a few years ago, has been arrested in London. Porter, with Frank Buck, another American burglar, is accused of a burglary committed at Zurich, Switzerland. The men were arraigned recently for extradition. Boston is the birthplace of William O'Brien, alias Billy Porter, who is a printer by trade. His criminal career had an early start. In New York Porter was arrested in 1877 for burglary at E. Tilge's warehouse, from which \$2,000 worth of silk hat linings was stolen. Porter with another was arrested again in New York in 1878 for the robbery of Bettermen's dry goods store at Williamsburgh. The amount stolen was \$6,400. They were released for lack of proper identification. In August, 1878, Porter and others were arrested in Brooklyn for the burglary of Martin Ibert's Sons' flour store. Porter escaped from the Raymond street jail in 1879. He went with a confederate to Providence, R. I., where C. R. Linke's jewelry store was robbed of \$15,000 worth of watches and silverware. He was accused of this crime. A month afterward Porter escaped from the Passaic, N. J., police, but was afterward captured in New York. He was taken to Brooklyn and convicted. He was sentenced to the penitentiary for five years. On his release Porter, with Michael Kurtz, went to Europe and they returned with \$25,000, the proceeds of operations while abroad. January 19, 1885, Porter was arrested in New York for the Marks burglary. The robbery occurred February 24, 1884. Porter was admitted to bail and was afterward acquitted. Johnay Irving, a partner of Porter, was shot and killed by John Walsh in Shang Draper's saloon. Walsh was killed at the same time, and Porter was tried for the killing of Walsh and was acquitted."

OUR WORKING DESIGNS.

Our artist's designs in the present issue again contain many ideas for the working jeweler. A collar button with an attachment for holding the scarf, a locket with the parts sliding from the pendant, three ornaments for the hair, an ear ring, a scarf pin with safety catch and a bonnet pin. In all these ten designs may be found many original ideas valuable to the manufacturer, and capable of being used in many ways. Attention is called to these designs printed on the tissue supplement.



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THE JEWELERS' CIRCULAR

AND

HOROLOGICAL REVIEW.

OFFICIAL REPRESENTATIVE OF THE JEWELERS' LEAGUE, THE NEW YORK JEWELERS' BOARD OF TRADE, AND THE JEWELERS' SECURITY ALLIANCE.

It is also the Recognized Exponent of Trade Interests.

A MONTHLY JOURNAL DEVOTED TO THE INTERESTS OF WATCHMAKERS JEWELERS, SILVERSMITHS, ELECTRO-PLATE MANUFACTURERS, AND THOSE ENGAGED IN THE KINDRED BRANCHES OF ART INDUSTRY.

SUBSCRIPTION.—To all parts of the United States and Canada, \$2.00 per Annum, Postage Paid. To all Foreign Countries, \$3.00 per Annum, Prepaid.

All communications should be addressed to

SETH W. HALE, PRES'T,
THE JEWELERS' CIRCULAR PUBLISHING CO.,
189 BROADWAY, NEW YORK.

Advertising rates made known on application.



A full Index to Advertisements and Table of Contents will be found on Page 5 of this issue.

THERE is a general impression in the trade that the fall business is going to be excellent, and that, notwithstanding the dullness of the last two months, the volume of business for the year will compare favorably with that of its predecessors. Indeed, it is maintained by some that the dullness was only relative as compared with last year, which was exceptionally good, but that business on the whole was as good in those two months as in the corresponding months of other recent years. While general business has been dull, there has been a fairly good demand for fine goods, and satisfactory quantities of precious stones and fine gold goods containing gems have been called for. But the manufacturers and dealers are already in the market with their novelties for the fall trade, as a glance at our advertising columns will demonstrate. It would seem as if the inventive faculties of our workmen had reached their limit, for pretty much everything that heart can desire in the way of jewelry appears to be available in every variety of form, style and quality; yet the American workman still has latent resources within him, and in the future will respond to the demand for novelties quite as readily as he has in the past. Since the days of the old Egyptian kings, manufacturers have been devising new and attractive forms of jewelry, and

they are not likely to exhaust their ingenuity so long as there is a demand for articles of personal adornment made of the precious metals in combination with the various gems. It is to be hoped that their devotion to their art may at all times receive the reward that lies in ready sales as evidence of appreciation.

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A DECISION recently rendered by the Court of Appeals has some interest to the jewelry trade, but especially to the manufacturers of plated goods. For a long time the dealers in tea, coffee, etc., were in the habit of giving presents of small articles to purchasers of their goods to a certain amount, and the competition between them became very active. They consumed in this way large quantities of small goods dealt in by the jewelry trade, and the manufacturers found them good customers. But an attempt was made to hold these tea dealers amenable to the law which prohibits lotteries and gift enterprises. The court holds that a dealer has the right to give away anything that he pleases, and to conduct his business in any manner he chooses so he does not offend public morals. Indeed, the court was rather severe in its characterization of those who sought to twist the law from its obvious meaning for the purpose of destroying a competition that was too active. Some time ago the tea dealers themselves concluded that the giving away of presents cost more than it came to, and agreed to give up the practice, but some of them did not live up to the agreement, and so the practice is continued to a considerable extent. Business men always have and probably always will, adopt any lawful method to increase their business, and they may safely be trusted to adopt only such methods as prove popular, and the public will not lend its countenance to anything immoral.

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WE CONTINUALLY hear the complaint that there is too much competition in the trade, and that the over anxiety to sell goods in consequence of it results in the cutting of prices till there is no money in the business. The same complaint holds good in pretty much every other line of industry, but we never could understand why any man should be tempted to sell his goods at a loss just because some other fellow did so. To say that there are too many persons in the business is like saying there are too many people. It is part of the scheme of life that people shall multiply, and that men shall work; consequently they must seek some industry that promises to give them a living. Every line of industry is open to every man, and no one has a monopoly of any business. A person seeking employment for his talents or his means has as much right to go into the jewelry business as he has into blacksmithing or railroading, and those who object to his doing so would be the first to claim such privilege for themselves if they desired to either change their occupation or to extend it. We feel sometimes as if there were too

many printers, and that it would be to our profit if we could kill off a few thousands of them, but our sanguinary proclivities are restrained by the thought that the superfluous ones are fellow-creatures, who have had the misfortune to be born, and so have the right to live, and as a means whereby they may live, they have the right to select the occupation they will follow quite as pronounced as we had when we elected to become printers. Competition is a great incentive to exertion, to development, and to success; if it were not for competition we would all sit down quietly and let things take their course, but the necessity of keeping up with the other fellows stimulates to action and compels us to put forth our best efforts. Civilization is the result of competition, and the wonderful progress nations and individuals have made in the result of their determination to keep up with the procession. Where competition becomes so active as to take on unbusiness-like methods, it may be injurious to those interested, but their only remedy is to put forth greater exertions and beat the other fellows in some other direction. The "good old days" of a hundred per cent. profit have passed from the jewelry business, and manufacturers and dealers must be content with such smaller profits as the men engaged in other lines of business have to put up with. There are still plenty of opportunities in the jewelry business for those who are willing to be content with moderate returns upon their capital and labor, but the days for accumulating sudden wealth in the trade exist no longer. The conditions of business in this country are each year more nearly approaching those which exist in the older countries of Europe, where a manufacturer or dealer is content to devote his life to his business, satisfied if he is able to retire in his old age on a modest competence, leaving his sons to carry on the business in the same way and with the same hopes and aspirations. There is little room for speculation in the jewelry trade, but good opportunities for men who are loaded with days' work, patience and application. To such a little competition more or less is a matter of small consequence.

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TORTOISE SHELL is an article used to a considerable extent in the jewelry trade, and many very beautiful and useful articles are made from it. A handsome specimen of tortoise shell, that has received added value from the deft workmanship of an artistic workman, always commands a ready sale at a good price. Tortoise shell is obtained in the West India Islands, where the tortoise are captured by the natives who make a regular business of hunting them. A small portion only of their shells is available for ornamental purposes, so that it seems like cruelty to sacrifice the life of the animal for so small a yield. But fashion is insatiable, as witness the destruction of birds that a few feathers may be obtained to decorate the hats of ladies. At the demand of the fair sex, even the tortoise tribe must go.

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OUR FOREIGN exchanges are discussing with considerable vigor, the question of the production of artificial rubies, the discussion being called out by the exhibition by M. Fremy, at Paris, of some infinitesimal samples of rubies that he had made in his laboratory at great cost and labor. The samples thus far shown are too small to have any market value, but M. Saunier seems to think that rubies may yet be produced artificially that will do for use in the manufacture of watches. There is no occasion for dealers in the genuine article to become alarmed lest their goods should be depreciated on their hands by the introduction of artificially made "genuine" rubies, for the experiments thus far made serve to more fully than ever demonstrate the fact that it is not possible to successfully compete with nature in the production of certain classes of goods that she turns out. The ruby market is not likely to be glutted with artificial rubies this year. These artificial "genuine"

rubies remind us of a friend of ours who has recently patented a device for making "hand-made" shoes by machinery.

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ONE OF our contemporaries, noticing the death of a gentleman connected with the trade, heads his obituary thus: "Death of John Smith—Fire Escapes Wanted." If it were among the possibilities that jewelers could ever go to a warmer country after death, this heading would be suggestive. Types and proof-readers do many things of an eccentric nature, and when we think that a printed page is the most complicated example of mosaic work that can be devised, the wonder is that so few errors and blunders appear.

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MODERN inventions in the jewelry trade have wonderfully simplified many things connected with the toilets of ladies and gentlemen. Who cannot remember when shirt buttons were the bane of the life of men and a constant nightmare to housewives, who were held responsible that shirt buttons should always be maintained in their appropriate places with the utmost integrity. Now neither shirts, men nor housewives are the slaves of the treacherous buttons, that had a habit of disappearing at the most critical moment. Now, gentlemen use gold buttons wherever the pearl affairs used to dominate, while for cuffs and collars gold buttons are made with various mechanical devices which secure the introduction of them into the refractory linen without injury to finger nails or compelling the use of bad language. These mechanical buttons have become so much of a necessity that the trade is flooded with different inventions of this nature, and that manufacturer who has not one or two patents on buttons is behind the times. Ladies also enjoy the blessings of mechanical buttons, and fasten their collars and cuffs with the same degree of facility and felicity that gentlemen do theirs. Great is the inventive genius of the ubiquitous Yankee, and in small things lie his profits.

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THE LETTERS of the various fashion correspondents to the daily papers from the numerous summer resorts, describe at length the richness of the toilets worn by the ladies, and dwell upon the fact that they are wearing an unusual quantity of jewelry this season. Precious stones are the chief articles of personal adornment with those who can afford them, but gold jewelry, filigree silver articles, etc., are greatly worn. One lady correspondent goes into ecstasies over costumes that are decorated with apparently loose gems, diamonds, rubies, pearls, etc., mounted on fine gold wire, almost invisible, scattered over the dresses of the ladies promiscuously, which gives them an appearance of having been caught in a shower of dew drops. Decorations for the hair are also very pronounced, and take on an infinity of form and style. At many of the fashionable weddings that have recently occurred in this vicinity jewelry has been conspicuously worn by all the parties on exhibition, from the bride and groom down through the ranks of best men and bridesmaids, to the spectators of either sex. Decidedly fashion is a fickle jade, and the ornaments that were despised by her a few years ago are now demanded in profusion. Jewelers should make hay while the sun shines, for the next turn of fashion's wheel may leave them at the bottom again.

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A GENTLEMAN of experience in the trade, referring to the articles printed in THE CIRCULAR relative to dressing show windows, says that his observation is to the effect that the chief fault of those having the work in charge is that they overdo the business, and make a window look like a hodge-podge, containing a little of

everything and showing nothing to advantage. Such remind him of the show window of a druggist who deals chiefly in patent medicines, and fills his windows with boxes and bottles that are conspicuous because of their highly colored labels. He called to mind the most attractive show window he had ever seen. The dresser obtained a piece of rich velvet which he threw carelessly across the bottom of the window, where it fell into a diagonal position; then he took a large handful of loose diamonds and scattered them carelessly over the velvet, where they reposed after a pell mell fashion, sparkling and glittering in the sunlight like drops of dew on a flower. The display caught the eye of every passer, because of its peculiarity and richness. It cannot be expected that every dealer keeps loose diamonds by the quart to scatter about in his show window, but the above illustration shows that a judicious selection from his stock will suffice for an attractive display, and that very little time and trouble are necessary, when good taste directs, to arrange an exhibit to catch the eyes of passers, and so call their attention to the fact that he is there for business purposes, and that he has fine goods to offer to all comers. Avoid over display; a jeweler's window should not be a junk shop, but should contain an artistically arranged display of fine goods, but above all it should be rearranged frequently, and the same exhibit not left until it palls upon the sight.

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A FEW DAYS since a workman engaged in the fourth story of a jeweler's establishment in Maiden Lane, in setting a diamond of considerable value, held the gem in his tweezers near the open window, when suddenly, and without any apparent cause, the little joker jumped from his grasp, disappeared through the window, and was immediately lost in the dirt of the street below. A search for it was forthwith organized, and the owner offered a reward of \$20 to whoever would find it. This stimulated a crowd of boys and men to engage in the search, and the street dirt for a block in the vicinity was gathered up and winnowed, but without avail, for the precious gem had disappeared most effectually. Whether some one of the searchers secured it and concealed it about his person, or whether it was left for the street cleaners to gather up and dump with other refuse out in the ocean, can never be known. MORAL—When you are fooling with precious stones, be certain that they are securely anchored, and beyond the possibility of escape.

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THE TRAVEL to Europe the present season has thus far surpassed in the number of tourists anything that has previously been known in a similar length of time. This is largely due to the fact that ocean travel is now so cheap that it is quite as economical to cross the water as it is to stay at home, while living on the other side, if one knows how to look for it, is less than it is here. One can get an excursion ticket, good for a year, on either of several steamship lines, for a trifle over \$100, and this includes excellent board for from eighteen to twenty days, according to the time consumed on the trip. The fast steamships charge a little more, but for one to whom a few days more or less is not an object, he can get equally good accommodation on a slower vessel at a cost not exceeding what he would ordinarily expend if he remained at home during a similar period. To those who enjoy a sea voyage, this is the most economical way of getting an extended trip. Many persons go over solely for the benefits derived from the voyage, returning on the same steamer. This gives them a week's run in a foreign port and the entire trip can be made inside of thirty days. Among those who have gone abroad this summer is a large number of gentlemen connected with the jewelry trade, many of whom took their families with

them, and will combine business with pleasure, making purchases while absent.

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SINCE a number of railroads have adopted the plan of compelling their employees to have their watches inspected by experts, and prohibiting them from carrying a watch that is not a good time-keeper, there has been considerable competition between those interested in the sale of watches to secure the appointment of inspectors favorable to them. The managers of one or two roads have found themselves in considerable hot water because the inspectors were so prejudiced in favor of a particular kind of watch that they subjected the employees to much annoyance and expense in changing the ones they had to others that would satisfy the inspectors. Of course they complained to the managers, and naturally trouble ensued. It is right and proper that railroad employees should be required to carry trustworthy watches, and that a standard of excellence should be established, but it is unfair that any inspector should insist that a particular make of watch should be carried by them. There are too many makers of watches that are reliable in every respect for any one to attempt to make a discrimination against one in favor of another. Manufacturers, however, are justified in resorting to every honorable means to sell their goods, and if they can secure inspectors in their interests, they can be depended upon to do so. But managers of railroads should be very careful to appoint only disinterested inspectors, who will establish a standard and leave the men free to buy any watch they please that comes up to that standard. No maker should be permitted to monopolize the business of any road, and the manager who permits it to be done is pretty apt to be accused of being in collusion with the sellers. The public is interested in the question to the degree that safety in traveling is dependent to a considerable extent upon trains running according to schedule time, and this cannot be done unless correct time is furnished those in charge of the trains.

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SOME six years ago there was organized in this city the Mutual Fire Insurance Company, for the insurance of property on the mutual plan. Mr. Aaron Carter became one of the directors of it, and was one of those who believed that the duties of a director are to direct. So he gave time and attention to the matter, and was one of the most trusted advisers of the executive officers. Subsequently, another mutual company, called the Fire Association, was organized, and Mr. Carter was chosen one of its directors, performing valuable service in both companies. There have been many changes in the personnel of these two companies during their existence, but none so radical as that which occurred early last month. Mr. P. B. Armstrong, who organized the first mutual, and was its secretary and manager, was removed about two years ago because of a disagreement with the president of the company; some time after, he obtained the presidency of the Fire Association, which he reorganized; about the middle of July, he and his friends also obtained control of the Mutual, and Mr. Armstrong was elected president of that company also. In both companies, the board of directors was reorganized, all of the old members resigning, their places being filled by gentlemen who favored the new administration. Mr. Carter was the only director of the Mutual who was re-elected, and he and one other were the only ones who were retained in the Fire Association board. This was a compliment to the business capacity of Mr. Carter and a tribute to his fidelity that shows the estimation in which he is held by business men with whom he is brought in contact, even outside of the jewelry trade, and was well deserved. Within the trade his name is a synonym of integrity and business enterprise, and it must be gratifying to his friends to know that his worth is fully appreciated in other business circles.

Industrial Art Education.



VERY year the necessity for the establishment of industrial art schools is becoming felt more and more. While we have made wonderful progress for a nation so young as ours in all that pertains to our maternal welfare, we are still behind several nations of the old world in art education, or in the application of artistic ideas to our practical industries. THE CIRCULAR has been a persistent advocate for the establishment of training schools where the arts, as applicable to the gold and silversmiths', the jewelers' and kindred trades, should be taught in such manner as to fit ambitious youths to take the places of the skilled workmen of to-day.

In this connection we present, in a condensed form, the views of the National Commission at Washington, derived from a vast array of facts, on this vital subject of Industrial Art Education. We earnestly commend these extracts to the thoughtful consideration of our readers. The report of the Commission says:

"Man may be defined as a thinking, talking and constructing animal. Other animals may partake of thought and in articulate speech man is superior; but though he shares the constructive faculty, still in the idealizing and emotional powers which make his capacity for art (including the ability to appreciate and enjoy it) he stands most completely differentiated; Art is (apart from revelation) the strongest proof of something other than animal in man.

"He is not only a receptive, but a creative and productive being. His art is the expression of some idea, object or emotion as conceived, perceived or felt by him, with such power as to reproduce in others the same thoughts and feelings. To the impression of his senses something of his individual soul is added, so that as his soul is attuned to the eternal principles underlying Beauty, his art is beautiful and eternal, or ugly and ephemeral. An added value is thus acquired when given out, which, in the case of recognized 'great art,' and in the degree of its rarity, will secure the highest honor, and even market value.

"In this world all must work—it is the law of life. It may vary in character, but work—honest work—it must be. Yet that which makes labor particularly honorable is this peculiar added quality of human intelligence and soul. By this very act the artisan becomes artist, the toiler a creator, the slave a freeman. Hence it follows that the most valuable laborers a community could possess would be true artists. A wonderful demonstration of this is seen in the national wealth inherited by Italy from its dead artists. No nation has ever been acknowledged great, or long survived in the love and reverence of mankind, which has not given birth to great artists—whether poets, painters, composers, sculptors, architects or others. No one can safely predict when and where genius, which alone makes possible the 'great artist,' will appear, but general intelligence and culture furnish the best surroundings for the prosperous development of such genius. He must be supported and sustained by a refined and general taste—a sound and pure art instinct. Certain it is that a noble art can never be predicted of an ignoble people. A knowledge by the people of those things which affect their common interest is an indispensable requisite, and it is in the highest and noblest sense that Art concerns them, since there is no more subtle and powerful influence for their elevation or degradation. Being a mode of 'Expression,' it may be used to express the highest truths and sublimest aspirations, or debased to pandering to selfishness and vanity. When consecrated to the service of the good—inspired by patriotism—devoted to the ennobling of ideals of city and country, to the perpetuation of great deeds and the great dead

—when the people take pride in a pure beauty for their public buildings and domestic dwellings—there must be a lifting up of the entire life of the community—for true art, noble art, is serious, earnest, purposeful. Lavish expense alone will not secure it, nor ostentation command it. It is not sold on every market day, nor purchasable by the pound. * * * *

Considering Art in its broad relations, we include those familiar phases by which she enters the daily intercourse of men's lives—the goddess descending as of old, among men. She lives with them by the fireside, in the market, in the workshop, in the field. A helper in toil, companion in play, gladdener of life, sweetener of labor, consoler of sorrow. Entering the world of work, Art is not thereby degraded, but stooping to the lowly lifts them to her own high level, giving to homely uses divine significance. Cheerfully excepting the limitations imposed by needs of use she links them to the divinest harmonies.

"Industrial Art is, therefore, but the application and adaptation of the principles of Art to the objects of daily use. Says Prof. Ferguson: 'To every want which technic arts supply Nature has added a gratification which refines the useful into fine arts. Time was when the art of the goldsmith was more precious than the gold on which he lavished it, when the blacksmith so shaped his iron that it was costlier than silver, and the weaver wove tapestries whose threads were so inwrought with the thought of the great masters that they are still precious. Art works thus become as true an expression of thought and feeling as art words. The genius may be the same, the channel different. The divine inspirations and sublime conceptions of a Michael Angelo, Raphael or Phidias, are as true poetry, and truly honorable as the spoken words of a Webster or written lines of Longfellow.' * * * *

"The place and function of art is not only in public galleries or parks—it is, above all, in the homes and firesides of the people! 'The democracy of art springs from the democracy of the people!' Says William Morris, the English poet-painter: 'I do not want art for a few, any more than education for a few, or liberty for a few.' The great creative works of man's genius can no more be narrowed down to private ownership than can sky, ocean and the liberal air. No system of education is truly sound, solid and democratic which does not make it possible for the child of superior merit to rise to the highest round of the educational ladder. The decision of the American people, as a whole, was taken long ago to give their children the fullest possible education for good citizenship, recognizing the necessity to any free country of a class of citizens possessing high culture, and the injustice of excluding any from obtaining it on account of material poverty. Where Liberty dwells, there will the Arts delight to come, and must, from the very nature of man, be more propitious to the putting forth of all his powers, since the true artist embodies the universal instinct, emphasizes the common thought, and their sympathy sustains and inspires him. It was so of old. There was an age and a Republic in which the arts flourished as never elsewhere. In Athens, the home of Phidias, art was 'The Art of the People!' Again in the mediæval Republics of Italy, how potent and all pervading was the love of art! How fully their rulers realized (what centuries demonstrated) that the works of their artists were the crown of the city and the glory of the people, and so immunity was granted them to follow their calling peacefully amid faction and revolution, for Art to prosper must be free. If it be domineered over—if it be enslaved by fashion or a patron's whims—its dissolution is sure. It was, likewise, from the union of all the forces of France of the twelfth century, that the Cathedrals arose, representing the social and intellectual movement of the age, and, in the largest expression of the old Gallic genius, left the poetic and impressive embodiment of the religious sentiment of Christendom to build a temple 'large enough for Humanity!' * * *

"As nations progress and consequent competition increases, the preparation required for the struggle of life varies as well for the

individual units which compose, as the nation itself. What was not felt here as a necessity a century ago is indispensable to-day. From an agricultural country the people of the United States must of necessity, with accelerated strides, become more and more manufacturing. Such is the world's development, to be successful it is clear that our manufacturers must become more and more artistic, *i. e.*, possess the genuine 'Art quality.' The United States every year continue to pay millions to the superior artists and artisans of other countries. Every cent of this represents a foreign tax, voluntarily paid, simply in consequence of ignorance and want of skill. It is in the nature of tribute money formerly sent by subjects to superior nations. Did we export an equal amount of artistic manufacture this humiliating payment would be only an honorable exchange, but to export raw materials and import mainly manufactured is a confession of inferiority! 'The Centennial' awoke us to this inferiority and at the same time to the presence and possibilities of beauty in manufactures, making us radically dissatisfied with past conditions. In machinery we had done well, but partly due to the fecundity of invention, facilities of transport and communication, we find ourselves in the midst of a wonderful revolution of the world's industries, and laboring under disadvantages which past training does not fit us to meet, while bringing the competition of most distant skill to our very doors. The Exhibition showed us that the labor with which we have to compete, the labor we have to dread, is 'the skilled labor of the world!' The enlargement of the boundaries of Art is being felt. Again, in Europe, as in the golden ages of Art, the master thinks it not beneath him to design for the artificer. Emulous of the splendid versatility of old, he does not hesitate to work out his ideas in any suitable material.

"The inartistic American worker finds the cost of living and competition have increased, while his markets have lessened. The waste and cost of the Rebellion have burdened him with a great debt, which means that more work must go to pay interest and principal, and less to his family. He must therefore, be made more productive or grow poorer and deteriorate. Outrivalled abroad, neglected at home, where shall the unskilled laborer find hope save in our industrial art schools? In the artistic development of our industrial resources, as in the experience of other nations, will be found the surest solution of our material prosperity, involving much of our labor and social difficulties. It will prove not only the acquisition, but the economy of power. The question, then, of the kind of education given in the schools is a vital and immediate one to every citizen, as well as statesman, legislator, educator or moralist. On it depends the prosperity, perhaps the life of the Republic, for on it depends the providing of a large and industrious productive body of citizens in place of the rapidly increasing class of the idle, ignorant and vicious. A powerful writer of to-day remarks: 'We cannot go on permitting men to vote and forcing them to tramp, or refusing them such training as shall give them skill to earn an honest living. At present the child of poor parents has no opportunity to acquire such skill. The community has therefore the alternative of providing ever more almshouses and prisons. The present school system is utterly one-sided. If it does not actually teach the child to despise honest work with the hands, it fosters the contempt which arises from ignorance and affectation, and ushers him upon the struggle of life unbalanced and unprepared. During the most plastic age, it ignores the productive faculties, and develops a monstrosity resembling the receptive livers of morbid Strasbourg geese, when true education would be the harmonious development of ALL POWERS, as well 'creative' as 'receptive.' * * * * *

"That a people so proverbially lavish of their means for the purposes of education, so profuse in their personal expenditure for foreign art products, as are the Americans, should remain insensible to the importance of the movements now going on in all civilized countries for the promotion of industrial artistic training of the people is passing strange! In no other respects have the Americans been

accused of a like difference to anything affecting their pecuniary interests.

"In all discussions concerning the relations of the public to education, it should be remembered that the Present is ever indebted to the munificence of the Past for instructions of learning. We should, out of gratitude to the Past, do for the Present even more.

"The possibility of public education in the elements of art, so far, at least, as to fit the pupil for after technical training in any special art industry, has been abundantly demonstrated; the utility of the few existing training schools has been proved; the practical value of artistic industries is made clear by the fact that manufacturers begin to undertake them as a business venture. There was one direct contribution to the instrumentalities for developing and extending art training in America, which resulted from the Centennial Exhibition, and this was the Pennsylvania Museum and School of Industrial Art. In this museum and school; in the excellent school of Industrial Art, at New York, in charge of Mr. J. W. Stimson; and in the Lowell School, in charge of Mr. Kastner, there are provided the facilities for practical instruction in artistic industries. These three institutions—the first two of which within the past two years have developed to their present efficiency—are, perhaps, the only schools able, at present, to train thoroughly instructed designers for and workers in artistic industries to meet the needs of more than fifty millions of people now living in the United States."

Lathes and Lathe Work.

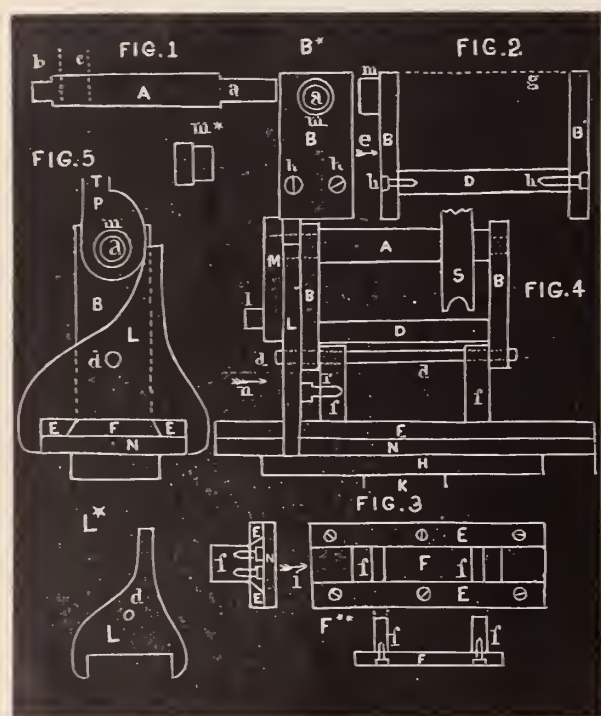
BY THE MODEL WATCHMAKER.



O RESUME our wig-wag. Let us first understand what we wish to accomplish. In a broad sense we must make a countershaft on which is placed a crank for moving our smoothing and polishing device back and forth; and it is also desirable that this countershaft shall only revolve when the polishing arm is down near to the work. In making such little attachments it is a pleasure, to say the least, to have them look neat and workmanlike, and still a man who has most of his time employed hardly feels as though he could sacrifice too much to good looks; consequently let us see if we cannot compromise and get up something which is cheaply made, and yet has a neat mechanical look about it. Brass, all things considered, is

the material most to be desired for such attachments, although, as American lathes are universally made of cast iron, many workmen would like to keep up a uniformity of looks and make the attachments of the same material. In this case I would recommend them to make wooden patterns and have the several parts cast, making due allowance, of course, for finishing, by making the patterns proportionately larger and heavier. One reason I have for recommending brass is because we can realize at once our object without the delay of making patterns and having them cast; and then if we wish to give a uniform look with the rest of the lathe, it is only to have the parts nickel plated at a small expense. If we use brass, the metal of which most of the parts are made, should be about $\frac{3}{8}$ of an inch thick. Of course, when speaking of brass $\frac{3}{8}$ of an inch thick, I mean sheet brass. The arbor of the countershaft shown at A, fig. 1, is made of a piece of Stub's steel wire about $\frac{5}{8}$ of an inch in diameter and $2\frac{1}{2}$ inches long, and shaped as shown. The main part is

turned slightly taper at one end so a driving pulley can be driven on one end to about the place indicated at the dotted lines (C). We next get out a piece of brass, which would be better if about $\frac{1}{4}$ of an inch thick, as there are 4 screws to go into the ends of it. This last mentioned piece is $1\frac{3}{4}$ inches long and $\frac{3}{4}$ of an inch wide. Next make two pieces $1\frac{1}{2}$ inches long, $\frac{3}{4}$ of an inch wide and $\frac{3}{16}$ thick. These pieces are joined together by 4 screws (*h*) as shown in fig. 2, which show the pieces seen edgewise after they are joined, *D* representing the piece $1\frac{3}{4}$ long and *B B'* the $1\frac{1}{2}$ inch pieces. The space from the upper surface of *D* to the top of *B B'* is one inch. The cut is half size. At diagram *B** is shown an end view of *B'* seen in the direction of the arrow *C*. The screws *h* are countersunk to be flush with the surface. These screws should be about $\frac{1}{16}$ of an inch in diameter and $\frac{3}{8}$ of an inch long. They can be bought of any large hardware firm for about 50 cents per gross. The reader will remember in June number of this journal, I gave the size of the brass cap *H* to the support *K*, fig. 2, as 3 inches long, 1 inch wide and $\frac{1}{4}$ thick. We have now to make a slide to go on this cap for carrying the part we have just made. This slide is composed of four pieces, *N E F*, as shown in fig. 3 and diagram *F**. The bed plate *N* is 4 inches long, $1\frac{1}{2}$ inch wide and $\frac{3}{16}$ thick. The piece *F* is got out 1 inch wide and 3 inches long, and the edges beveled as shown



in diagram *F**. The pieces *E E'* are got out $\frac{3}{8}$ of an inch wide and 4 inches long, and one end of each is beveled as shown in diagram *F**, which is an end view of fig. 3 seen in the direction of the arrow *i*. Attached to the slide *F* are two studs *f f'* as shown in fig. 3 and diagrams *F** and *F***. The outside faces of the two studs *f f'* are the same distance apart as the inside faces of the pieces *B B'*. The studs *f f'* should be $\frac{3}{4}$ of an inch square and $\frac{1}{4}$ thick, as they are to be secured to *F* by 4 screws precisely as described for attaching *B B'* to *D*. It will be noticed in diagram *B** there is a hole shown in the piece *B'* at *d*; there is a corresponding hole in the piece *B* coinciding to the dotted lines *d*, fig. 2. It will also be noticed in diagram *F**, there is a hole *d* shown in the stud *f*. At fig. 4 the parts are shown together, and the lower ends of the pieces *B B'* being joined to the studs *f f'* by a long steel pin *a*, passing through the holes *d* in the several figures. The object of this joint (on the pin *d*) is to slacken the band from the lathe pulley to the pulley *s*. We will have to go back now and take up the arbor *A* again and complete it. The piece *B'* is bushed for a bearing to the arbor *A*, shown at *a*, fig. 1. This bush is shown separate at diagram *m**, and also in its proper place at *m*, fig. 2. This bush should be secured in *B'* with both riveting and soft solder. The arbor at *a* should be a full $\frac{1}{4}$ of an inch at the shoulder it forms with the main

part *A* and $\frac{9}{16}$ long. The bearing at *b* should be about $\frac{3}{16}$ in diameter, and the same length or enough more than this length to give the arbor *A* the proper end shake. The part shown at *M*, fig. 4, is merely a crank with three-fourths of an inch throw to move the wig-wag shown in fig. 3. June number of THE CIRCULAR. At fig. 5 of this issue is shown an end view of the slide seen in the direction of the arrow *n*, fig. 4. It will be noticed a piece is shown at *L*, fig. 5, of peculiar shape. This piece is also shown separate at diagram *L**. It is shaped as shown and made of $\frac{3}{16}$ brass. It has a hole through which the joint pin *d* extends, but it is also secured to the stud *f* by two screws *r r*, diagram *L**, and likewise shown in figs. 4 and 5. In fig. 4 is shown at *R* a piece of $\frac{3}{16}$ brass, $\frac{1}{2}$ an inch high and $\frac{3}{4}$ wide, which goes between the stud *f'* and the piece *L*. The piece *R* should be left a mere trifle thicker than *B'*, so that *B'* will turn freely on the pin *d*. Turning on the protruding end of the bush *m* is an eccentric *P*, shaped as shown, and made out of $\frac{3}{16}$ brass; attached to this eccentric is an arm *T*, which is also attached to the wig-wag carrier shown in fig. 4 of the June CIRCULAR, the broken bar *O* connecting to *T* of the present number. The reader will readily see that by turning the arm *T* downward in the direction of the arrow *t*, fig. 5, the action of the eccentric *P* against the arm *u* of the piece *L*, the frame *B'* holding the arbor *A* and pulley *s* will be thrown backward to the position indicated at the dotted line *B''*, the effect of which would be to tighten any band around the pulley *s*. The complete action will be explained in our next article.

Old Plate.



WE HAVE received from the publishers, the Gorham Manufacturing Company of this city, a copy of a new publication entitled: "Old Plate, Ecclesiastical, Decorative and Domestic; its Makers and Marks, by J. H. Buck." Mr. Buck has been connected with the Gorham Company for many years and has made a special study of the subject of which he treats in this volume. The work contains 268 pages, is printed on beautiful paper, and is elegantly bound. It contains eighty-two illustrations of examples of old plate, some of which are fine lithographic full-page illustrations. In every respect this volume is worthy the reputation of the house from which it emanates, the elegance of its mechanical execution being above criticism. Mr. Buck has rendered the trade, and the antiquary as well, a most excellent service in preparing this history of old plate.

On another page we present four of the illustrations found in this volume, representing two standing-cups, and two loving-cups, which are thus described by Mr. Buck:

"The Ambleside Cup is an illustration of it. This is an exquisitely wrought cup, with steeple cover, used as a chalice at S. Mary's, Ambleside.*

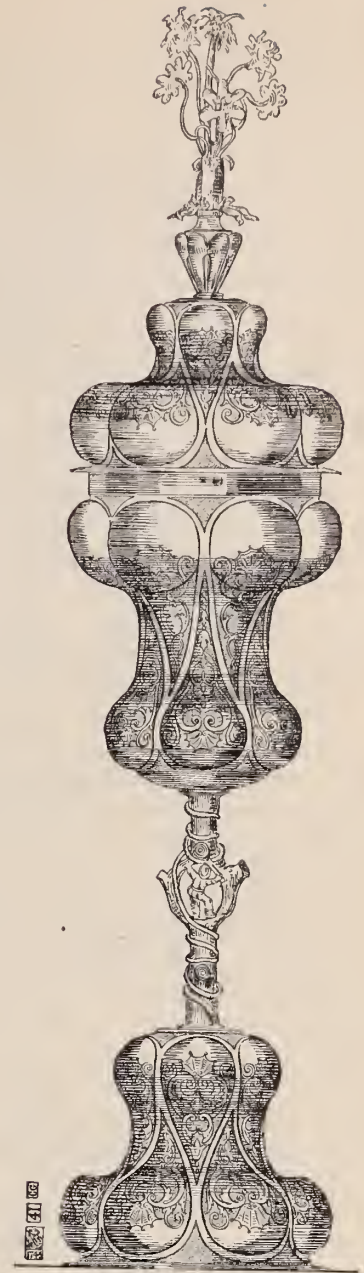
"The bowl of the characteristic pointed shape of its period is richly repoussé and ornamented from the stem upwards with three acanthus leaves flanked with cockle shells. Floriation descends from the plain band at rim to complete the design. The base itself is set upon three flying supports bent in griffin shape; these in turn spring from the higher of two bulbous ornaments that together form a sort of baluster stem, and are themselves set upon a handsomely repoussé bell-shaped base. For the base's ornament the acanthus leaf and cockle shells re-appear. The cover fits over, not inside, the rim of the bowl, and is ornamented with the acanthus leaf and cockle shell in repoussé. It is surmounted by a fine pinnacle or steeple of open lattice work set off at the base with supports, and at the top with a foliated finial, giving the general appearance of a four-sided crocketed spire."

This cup and cover are fine specimens of the fashion that pre-

* "Old Church Plate in the Diocese of Carlisle." R. S. Ferguson.



CUP AND COVER (1618); S. MARY'S, AMBLESIDE.



RUSSIAN CUP (MOSCOW, 1745); THE PROPERTY OF THE GORHAM MFG. CO.



LOVING-CUP, (C. 1731); HARVARD UNIVERSITY.



LOVING-CUP (C. 1700); HARVARD UNIVERSITY.

vailed from 1608 to 1628, of which the Winthrop cup (1610), in the possession of the First Church, Boston, is a good example.

This, unfortunately, lacks the cover.

A similar cup, gilt, and weighing forty-six ounces, was sold at Christie & Manson's Rooms, London, in June, 1875, for \$1,000, or about \$22 an ounce.

To these succeeded a much less artistic form of cup, which held its own, however, much longer, being found from about 1638 to 1694. The bowls of many are covered with granulated ornament and the stems are plain balusters standing on circular feet. This brings us to the XVIII. century and the simple but massive two-handled cups, with covers, that mark the reigns of Queen Anne and the early part of the Georgian period. These seem to have been the only cups made for a long time, and they are of every size and degree of finish.

The two loving cups, the property of the Harvard University, are good examples. That with the gadroon base and cover has the well-known London maker's mark, I C, mullet below, lobed shield. It is engraved with a coat of arms and the inscription :

"The gift of the Hon. William Stoughton, who died at Dorchester, July 7th, 1701."

Among the numerous pieces of plate on which this maker's mark is to be found are the plain tankards *ex dono* Sebright, at Jesus College, Oxford (1685).

The plainer loving-cup has also a coat of arms, and the inscription : "From the bequest of Col. Samuel Brown, of Salem, 1731." The maker, John Birt, was a Boston goldsmith ; his name is to be found on the large flagon presented to the New North Church in 1745, now in the possession of King's Chapel. In the records of the University are the following entries :

"1699 Hon. William Stoughton erected a building called Stoughton Hall. . . . In 1700, probably the same gentleman gave a large silver bowl, 48½ oz., and a goblet, 21 oz.

"1731 Col. Samuel Brown left by his will £60 to the College for purchase of a piece of plate."

Among standing cups of quaint shape is the Russian double-cup, with the Moscow mark, dated 1745, 18 in. high. The body of this cup is beaten out into six semi-circular lobes, which descend in points, chased with arabesques, alternating with six others reversed, under a plain round lip ; these lobes, which contract in the middle, expand into the smaller reversed series that make the bottom of the cup. The base, or lower cup, and the cover are the reverse of this, the cover finishing in a vase, surmounted by a cluster of flowers of beaten work. The stem represents a tree-trunk, with lopped branches and stalks entwined, having between them a woodman with an axe in the act of chopping at them ; a slender vine of silver surrounds the whole. These stalk stems were very common in Germany during the XVI. century.

No special forms or fashions can be identified with any particular period from the middle of the last century onwards, if we except the oval pointed cups, sometimes fluted, but more often ornamented with hanging festoons, sometimes carried over medallions, which are also found on the Wedgwood ware of the time of Flaxman. The potters and the goldsmiths have often copied each other's designs, or else have resorted to the same designers."

Watch Repairing.

WE COME next to the third and fourth bridges on the bottom plate, which has had the jewels broken out and bushes soft-soldered in and out of upright.

Says E. Britten, in an exchange, the best way to remedy this is to make a new one.

Get a piece of well-hammered sheet brass, about one-quarter of an inch thick, and file or saw a piece out, approximately the shape of

the old bridge. Make it perfectly flat and true on one side, either by turning it with slide rest in lathe, or filing it carefully ; then drill and tap the holes for steady-pins, and fit the pins by screwing them in, leaving the projecting part smooth. Fit the bridge on the plate, and mark through the screw holes in the plate the places for the screw holes in the bridge ; drill them and countersink for the screw heads.

Screw the bridge, thus far finished, to the plate, and pin the two plates together with four pins : place the frame in the universal head or face plate, and insert the point of the pump center in the third pivot hole of the top plate, and mark the spot on the bridge for the third pivot hole ; this is done either by hand, using the graver, or by the pointed center in the tail-stock spindle. If the centering is done with the graver, it is better to cut several small circles on the plate, getting gradually closer to the central point in order to facilitate the placing of the graver on the exact central point, as, if a tit is raised, it is very difficult to remove it. A few trials is all that will be necessary to become proficient in centering by hand, and it should be practiced at first on a piece of brass wire. I do all my centering this way, even for small staff and pinion pivoting.

Drill the pivot hole a shade smaller than the correct size, and make sure that the *head* of the drill is considerably larger than the stock, or else it is very liable to choke and break off in the bridge ; center and drill for the fourth pivot the same way, and then see that the end shakes are right ; this is very important as the third wheel runs so close to the center wheel that a very slight shake only is admissible in the general run of English levers, and the fourth end shake should be as small as possible, consistent with safety, in order to reduce the chances of the hands catching. After all this is attended to, it only remains to give the final shape to, and finish up and gild the bridge. If the slide rest and universal head are in good shape, a polished cutter is used, the finish from the cutting will be sufficient without any subsequent stoning or grinding, then all that is necessary is a thorough scratch brushing and gilding.

Before proceeding further, I might mention that to make doubly sure of getting the third and fourth wheels upright, it is best to clamp the top plate separately in the universal head, and after centering with the pump center, to place the point of a long piece of pegwood in the hole, resting it on the rest just a little way from the pointed end, and then revolve the plate, and if the hole is not truly centered the far end of the pegwood will rise and fall, in which case loosen the dogs slightly and tap the plate in the desired direction, until the pegwood remains perfectly stationary when the plate is revolved.



[FROM OUR SPECIAL CORRESPONDENT.]

PARIS, July 10, 1888.

We are now in the dead season, as people in business call it. The French capital falls into that torpid state, every year, after the grand Prix, to revive at the first falling leaves. It might be more exact to term it the sleeping season, as it is not, after all, a thorough standstill. In the summer, Parisian shop people are frequently roused out of their afternoon slumbers by *provinciaux*, or foreigners, who want to bring home a little souvenir. Those purchases, when often repeated, are sufficient to make our jewelers and dealers in fancy articles aware that Paris is not quite deserted.

We are bound to confess that, in spite of the numerous fêtes and soirées of any description given by our wealthy classes, the jewelry trade has not been very flourishing during the last six months. It is

true that all the well-known houses have received their usual amount of orders for occasional presents, wedding sets, or *cotillons 'accessoires*; but the shops that find their best customers among traders, employees and thrifty workmen have greatly suffered. That kind of purchasers know by experience how difficult it is now-a-days to earn a little money, and, therefore, when they buy something they must go about and, naturally, give the preference to what they believe to be real bargains. The *bourgeois*, or retired traders, who see the percentage of their investments gradually decrease, take exactly the same course when they are obliged to part even with a few francs. In their anxiety to obtain, at a low price, what they require, they overlook the quality of the articles they buy. Besides, when they have to make a present, they generally say: as long as it looks good it is all right; consequently they desert the trustworthy jeweler who had their custom for many years, because the wife, who goes almost every day to the "Magasin du Louvre" or to "The Bon Marche," to get some ribbons, says that clocks, watches, jewels, etc., are sold there at a more reasonable price (which is not at all accurate, if we consider the quality of those articles).

It is utterly impossible to admit that you can get, in the same place, gloves, boots, hats, dresses, linen, toys, clocks, jewels, watches, statuettes, etc., and that everything will be of a good make. Even a simpleton could not be brought to believe that the manager of such a house has been able to acquire, in every branch of his business, the thorough experience, without which he cannot be capable to appreciate the real value of the goods he undertakes to sell. He cannot, either, choose every one of his assistants with discrimination. All he aims at is to buy cheap, so as to get a good profit, in labelling fetching prices.

The ex-commandant, Hériot, manager of the "Magasins du Louvre," who, recently, at his country seat, "La Boissière," near Rambouillet, tried, in a delirious fit, to kill his wife with a revolver, and to commit suicide afterwards, has always been known by his acquaintances as a man of very great abilities, but, at the same time, thoroughly deficient in refined taste. His large fortune would have enabled him to fill up his residences with very valuable *bibelsots*. Yet all he pointed out to his guests, with a most candid pride, consisted of pieces of a very commonplace style. This shows, with glaring evidence, that he was utterly unfit to manage any artistic kind of business. We are perfectly certain that, sooner or later, the easily contented customers of those places will open their eyes to those facts, and return to the jewelry shops, where they bring already to be mended all the unguaranteed goods they bought at those preposterous bazaars.

Another great evil, which the gem dealers and jewel manufacturers are the first ones to complain of, is the unbroken succession of sales at the "Hotel Drouot," at the Bourse, and other places. Old or new jewels of all sizes and descriptions, set or unset stones, real or sham family relics, unknown collections suddenly springing to the light, have been pompously advertised and sold out every week, if not every two or three days, for the last six months. Several jewelers who had ready money and knew their way about, found there some real bargains, but it has proved in general a rare plague to the trade. The repetition *ad nauseam* of these sales has caused them, happily, to yield less and less, and we are led to believe that those who tried, through a legal underhanded way, to make a good profit in getting rid of their *rossignols* are beginning to see that their string is wearing out.

President Carnot witnessed on the 6th of June, at the Louvre, the opening of two rooms, where are deposited some most interesting remains of old Persian glory, found by Mr. and Mad. Dieulafoy, as they directed diggings on the site of ancient Suze, during their scientific mission in Asia. Those various pieces throw a curious light on the condition of architecture and art in the mightiest empire existing twenty-four centuries ago. At first sight, the most striking part of the Exhibition is the bicephalous capital which Artaxerxes Mnemon's palace, as well as a bas-relief of clay, covered

with a coating of vitreous substance looking like enamel, showing two lions with a green mane, blue and yellow moustaches and yellow paws. Two large friezes, which belonged to "Darius the first's" state hall, force themselves, too, on the attention. On them are figured the royal guard's bowmen, called "Immortels." They are seen side face, holding a javelin. Their long robes are ornamented with lozenges and stripes of various colors, and bear the three towers of Suze, perhaps the oldest suggestion of heraldry. Besides the lamps, incense burners, statuettes, etc., we must especially mention the important collection of seals, some of them in a cylindrical shape. They are made of stone different in color, and engraved in a way to deserve not only the admiration of the antiquary but also the careful attention of artists.

On the opening day, while Mr. Dieulafoy gave our President all the explanations he required, the lady explorer, in her well-fitting dresscoat and open waistcoat, answered Madame Carnot's questions. Accustomed to go about in man's clothes ever since she fought by the side of her husband in 1870, Mad. Dieulafoy feels thoroughly at home in the king of creation's costume. She caused a certain sensation when she was seen, dressed like a young gentleman favored with the red ribbon, in a box, at the Opera Comique, two nights before it was burnt, more than a year ago. But now everybody understands that what would seem eccentric in an idle female, must be natural on the part of a woman who has shown for many years the energy of the most determined man.

Several grand weddings have taken place during the last month. That of Mlle. de Yturbe with Mr. Juan A. de Beistegui took place on the 21st of June. The Mexican couple, both of whose families have lived in Paris for many years, were united in St. Augustin's Church. A large attendance, headed by the Spanish ambassador and Mad. de Leon y Castillo, and chiefly consisting of the Hispano-American colony, witnessed the welcome event. Among the most remarkable presents were two splendid pearl necklaces of six rows each, given to the bride by Mr. de Yturbe and the bridegroom, a lovely toilet set of the Louis XVI. style, in oxidized silver *repoussé*, and some exquisite Venetian laces of the sixteenth century.

A long run of cold weather, coming after the Grand Prix, has retained our high people in Paris until the beginning of July. Many shivering garden parties glittered during that period. At Mlle. Adolphe de Rothschild's, the guests received little souvenirs for their young ones, in the shape of delicately chased bonbon boxes in silver, and pretty *figurines* of babies in all kinds of bewitching attitudes. We are greatly indebted for that new custom to the North American colony.

The princess de La Tour d'Auvergne Lauragais, has given a brilliant soirée for the opening of her elegant hotel, at the Boulevard des Invalides. The oriental sky-blue robe which the viscountess de Trédern had on that night, was of a most graceful effect. A diadem, made of diamonds and rubies arranged so as to form a *grecque*, stood on her golden hair, and gave her the appearance of a queen of tragedy.

The fashion of using a *face-à-main*, which is an eyeglass with a handle about 28 centimètres in length, has been more than two years trying to come out. I recollect seeing one in the hand of an elegant old lady, at the jewelers' ball, in March, 1886; and last year I noticed several young girls, of a decided coquettish turn, conspicuously handling some very showy ones, at a well known music hall. This very same *face-à-main*, suddenly making a determined move, has rapidly become the indispensable companion of our ladies in places of high resort. At the Grand-Prix, each of the leaders of fashion had one with magnifying lenses. Most handles are made of dark or blonde tortoise shell, inlaid with gold or gems figuring initials or pretty designs. Yet, I have seen many in mother-of-pearl, or worked oxidized silver.

The well deserved success of Lalo's "Roi d'Ys," so beautifully sung and so perfectly acted, brought, every other night to the Opera-Comique Provisoire, during the last month, a host of extra elegant

people, who would hear over and over again those lovely melodies, so as to engrave them in their memory before they left the Capital. I noticed in a box a very young looking married lady, having a diamond necklace with pendants in the shape of fern leaves, gradually increasing in length from sides to the center. The stones were of so pure a water that, when she moved, they threw a kind of rustling light, if I may be allowed to speak thus. On her head and slightly on her left side, she had three daises made of diamonds, and arranged in a triangle with a small bunch of new-blown roses springing at the back of the top one.

I remarked, at the opera, on a head of dignified appearance, a glorious peacock, resting on a large pearl. The body, upright, was made of a cat's eye imprisoned in a close gold network, and the displayed tail, fan-like, in delicately chased gold, was inlaid with various stones of different sizes and at some distance from each other; the whole of it looking thoroughly natural.

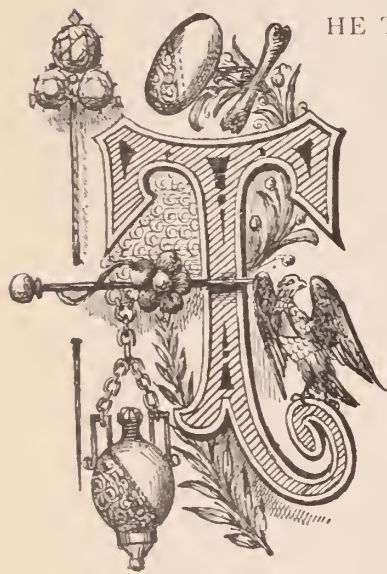
Some ladies wear a watch with a deeply oxidized steel case, hanging from underneath a slanting bow fixed on the left side of the bodice near the waist. Large gold initials entwined, are superimposed on the back of the watch, and repeated in a reduced size on the top end of the bow.

A sword of honor has been offered to the Duke d'Aumale, for the moment in Brussels, by an important body of Frenchmen, who will resent to the last the banishment of the gallant and liberal prince. That remarkable piece has been made at Froment Meurice's place, and according to the style of the sixteenth century. The blade is handsomely damaskeened with gold. The ivory figure forming the hilt has been carved after Chapu's model; and Daumet, Chantelly's architect, has designed the shell-like guard of burnished silver underneath which is engraved: *Gallia memor.* JASEUR.

Free Hand and Mechanical Drawing.

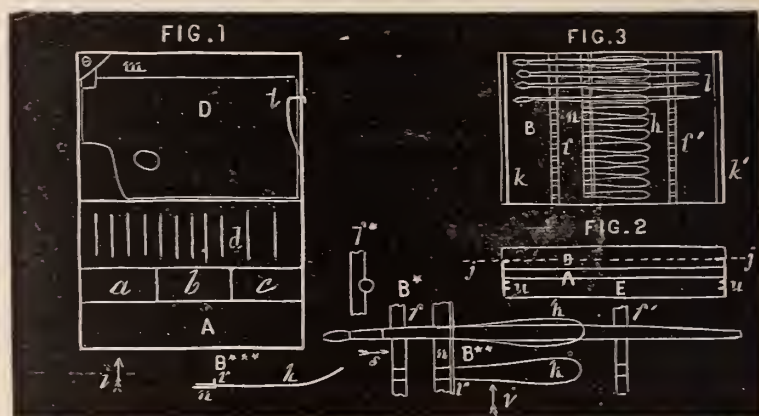
BY EXPERT.

THE TEXTURE and surface of the paper employed has much to do with the beauty and effect of water color drawing, especially in large works. For earlier efforts it is not well to attempt a drawing larger than about 18 by 24 inches, and in these the grain of the paper should not be too coarse. I hardly know how to describe or convey the idea of the texture of the paper better than to suppose we should spread a sheet of wet tissue paper over a sheet of No. 2 sand paper, and let the grains of sand produce excrescences in the tissue paper when it dried; paper of about the same grain or roughness would be proper



for a picture of the size mentioned. I wish to say a few words about the use of opaque colors in water color drawings. These colors are very little used in this method except for foregrounds, and then only sparingly to produce a sharp, crisp effect, like grasses and rocks or the trunks of trees. The manner in which such colors are used is to prepare some Chinese white by grinding from the cake until about as thick as cream, when other colors are added to it as occasion requires; as, for instance, in painting stems and blades of grass we mix a yellow green, produced from cadmium yellow and cobalt blue, the yellow strongly predominating. Enough of this yellow green is mixed with some of the prepared white to strongly tint it. Now, with a small pencil brush paint in such blades and stems of

grass as seem to be needed, producing the effect with quick, vigorous strokes, and continue until it seems as if you were producing a sort of sameness, as it is easy to break the strength of the effect by going over some of the parts with a brush filled with gamboge, modified with brown madder or indigo and lake. In touching up the sharp, well-defined edges of rocks with Chinese white, the peculiar touch to convey a sense of hardness and ruggedness will soon suggest itself better than can be conveyed in words. No artist ever succeeded to any eminence until he attained a method of his own. Look at nature and study how you are to produce the same effect with your colors on paper. Where glimpses and patches of sunlight fall through foliage on rocks and trunks of trees, the use of body color tells with great force. I would like to continue the subject of water color drawing farther, but I think I can convey a better sense of pictorial work by leaving water colors for the present and treat of oil colors. I hold this as being true even if the pupil had decided to adopt the practice of almost exclusive water colors. In this day artists almost universally practice in both oil and water color, and, in fact, an artist should be well acquainted with both methods before he decides by which he can best express himself. To sketch from nature there is no method more satisfactory than oil colors. A good commodious box for holding all the accessories can be bought for \$1.75. Such boxes are indispensable, but they need modifying before they are just what one wants for a sketching outfit. What is needed in addition to the requisite colors is a place where the sketches can be placed and be safe from being smeared. This is duly provided for in one of these boxes such as I mentioned above. In addition we need a place where a palette loaded with colors can be placed and



not be disturbed. After this is accomplished we require an arrangement to hold 12 or 18 pencil brushes filled with colors in such a way they will not smear anything or be stubbed up by handling the color box. An artist friend has devised and made for himself such a color box, which he kindly permits me to make a drawing of for the benefit of the readers of THE JEWELERS' CIRCULAR. I have no hesitation in pronouncing it the most convenient sketching outfit which ever came to my notice. I will give you a general description of it and then show the details of the improvements. To commence with, it was simply the ordinary black japanned oil sketching box of the color shops, 13½ inches long, 10 inches wide and 3 inches deep. And when the lid was open the shape of the color trays were as shown in fig. 1, which is a plan of the top of the box, the cover being thrown back as shown at D. These boxes are too common to need any further description except in reference to the added improvements. The part at A shows the ordinary arrangement for colors and brushes, the little trays a b c being for the bottles for holding nut oil, turpentine and japan drier. At fig. 2 is shown an edge view of the box seen in the direction of the arrow i, fig. 1. Above the trays shown at A is a ½ inch space before we come to the top of the box which corresponds to the dotted line j j, fig. 2. This space is utilized for a pencil brush holder. The heavy white lines at j j represent the edge of the color box which turn inward as shown between these edges, and above the top of the tray shown at A slides the brush holder shown at B, fig. 3. This brush holder B is near the full size of the

box, so it will just slide under the turned in edges shown at *jj*. This holder *B* is made of $\frac{1}{8}$ of an inch wood with 4 cleats which are both nailed and glued to the thin board *B* (these cleats are shown at *k' f' k'*, fig. 3). The two cleats *kk* are simply two pieces of $\frac{1}{4}$ inch wood $\frac{3}{8}$ of an inch wide; but the cleats *ff* have each 12 notches in which the brushes rest as shown at *l*, fig. 3. For holding the brushes into their several notches loops are provided of spring brass wire, about No. 20 or 22. These are about 4 inches and shaped as shown at diagrams *B**, *B*** and *B****. At *n*, fig. 3, is shown a strip of brass or tin $\frac{1}{2}$ of an inch wide, with one edge turned up as shown at *r*, diagram *B***. In the edge *r* are drilled small holes to receive the ends of the spring loops *h*, as shown in diagram *B***, which is a magnified top view seen the same as fig. 3. The ends of *h* extending over *n* are soldered fast with soft solder. At diagram *B** a brush is shown as held in place by the loop *h*. At diagram *f** is shown an end view of the brush and cleat *f'* seen in the direction of the arrow *s*. The palette is held in place in the lid *D* by the spring *t* and button *m*. The lower space at *E*, fig. 2, has grooves shown at *uu* into which two wet sketches can be placed back to back and be perfectly protected from smearing. The great improvement of this arrangement lies in being able to carry brushes loaded with colors about from place to place and keep them from daubing anything. There are one or two improvements to be added to our color box, after which we will try and use it. Diagram *B**** is a view of spring *h* seen in the direction of the arrow *v*, diagram *B***.

Wedding and Engagement Rings.

IN THE following communication a subject is opened up which has already been deemed worthy of being discussed in more than one volume, replete with history, customs and incidents relative to the uses of finger rings.

ST. LOUIS, July 7, 1888.

To the Editor of the *Jewelers' Circular*:

In the *St. Louis Post-Dispatch* of the 6th inst., it is stated—in answer to an inquiry—that the third finger of the right hand is the engagement ring finger, and that the third finger of the left hand is the wedding ring finger. Feeling that this statement was not exactly correct, we asked several persons who have been jewelry salesmen for the last ten or 15 years as to the correct custom, and was informed that the third finger of the left hand was both wedding and engagement ring finger. We inquired of others who had been 30 or 40 years connected with the trade who agreed with the others in regard to the wedding ring finger, but who were very positive that the first finger of the left hand was the engagement ring finger. As there seems to be a diversity of opinions in regard to a custom that is daily observed, I respectfully suggest that a brief history of the custom, with a statement as to the proper manner of wearing the kinds of rings, would make very interesting reading in THE JEWELERS' CIRCULAR.

Very respectfully, W.

Without going into tradition or history at the present time, we will say that the finger upon which to wear the engagement and wedding rings is dictated by that fickle goddess, Fashion, and differs according to nationality and changing fancy. In this country it was formerly the practice to wear the engagement ring on the third finger of the right hand; subsequently upon the first finger of the left hand. Fashion, however, now decrees that the engagement ring shall be worn upon the third finger of the left hand, and that later a plain gold ring shall be worn upon the same finger. The engagement ring is usually ornamental and valuable, containing precious stones, and the plain gold wedding ring serves as a binder to insure it against loss. At least, that is a practical view of its use; theoretically, it indicates that the vows exchanged with the engagement ring have fructified and brought forth the expected result, a wedding. The

third finger of the left hand was selected for the wedding, because according to tradition there existed a special telegraphic communication, by means of blood vessels, between that finger and the heart, which no other finger possessed. But modern students of anatomy have "knocked out" that pretty little idea by demonstrating that the third finger is not peculiar in this respect. A writer upon finger ring lore says that the third finger of the left hand was selected for this decoration because the left hand is less used than the right, and the third finger less than any other; hence rings worn upon it would be subjected to less wear and tear. He notes the fact that the third is the only finger that cannot be entirely straightened without moving some other, which may have given rise to the belief that it was specially controlled by the heart. A fact in connection with the wedding ring traditions is that a ring was originally given to the bride to indicate that in marrying her lord and master she became subject to him in all things—voluntarily or otherwise became his very slave. But in all ages marriages have been symbolized by the use of a ring, and many very pretty stories and romances cluster about the custom. An old Latin work ascribes the invention of the wedding ring to Tubal Cain. In a volume of poems published in 1801, occur the following lines with which the poet presented the ring to his *fiancé*:

"Emblem of happiness, nor bought nor sold,
Accept this modest ring of virgin gold.
Love in the small but perfect circle trace,
And duty in its soft yet strict embrace.
Plain, precious, pure, as best becomes the wife;
Yet firm to bear the frequent rubs of life.
Connubial love disdains a fragile toy,
Which rust can tarnish or a touch destroy;
Nor much admires what courts the gen'ral gaze.
The dazzling diamond's meretricious blaze,
That hides with glare the anguish of a heart,
By nature hard, tho' polished bright by art.
More to thy taste the ornament that shows
Domestic bliss, and, without glowing, glows;
Whose gentle pressure serves to keep the mind
To all correct, to one discreetly kind;
Of simple elegance th' unconscious charm,
The only amulet to keep from harm,
To guard at once and consecrate the shrine;
Take this dear pledge—it makes and keeps thee mine."

Practical Hints on Optics for Skilled Opticians.

[BY C. A. BUCKLIN, A. M., M. D., NEW YORK.]

DR. CLAIBORN, in an article published March 3d, 1888, in the *New York Medical Journal*, considers at length the subject of selecting the too powerful muscle in hyperphoria. I publish the same for the benefit of those who wish the subject considered at length:

It has been stated that "a prism with its base down before one eye is equivalent in its action to a prism with its base up before the other." Inferentially, then, any prism that represents the power of the superior rectus of the right eye represents the power of the inferior rectus of the left eye; hence also the value of the superior rectus of the left eye, reckoned in prisms, is the value of the inferior rectus of the right eye.

From the standpoint of antagonism, one would infer that the opponent of the superior rectus of one eye was the inferior rectus of the other eye, and *vice versa*.

It seems to me that the antagonist of the superior rectus of one eye is the inferior rectus of the same eye. When the eyes are directed to distance and at an object in the same plane with themselves, the tension with which the superior rectus of each eye pulls should just equal that with which the inferior rectus of the same eye

pulls. Equal tension would then be established, so far as the vertical straight muscles are concerned. It is stated also that "we can not make accurate determinations of both right and left sursumduction, if the test for one follows without interval after the other." It seems to me possible to make the determination of right and left *sursumduction* and *deorsumduction*;^{*} this is the point at issue, and this has furnished the *casus scribendi*.

As prisms of various strength have been accepted as the expression of power for the ocular muscles, we will use them in the following. In the cases cited below, whenever there was hyperopia with good distant vision the error was corrected. Myopia was corrected in all cases. The distance of the patient from the object was fifteen feet.

The method of procedure is as follows. The patient being seated erect in an armless chair, with the head held as nearly as possible in the horizontal plane, homonymous diplopia is caused by placing a strong prism, with its base inward, over either the left or right eye. When the two images are seen in the same horizontal plane, equal tension of the vertical muscles is supposed to exist; the power of the separate vertical muscles of each eye is then determined, commencing with the *right eye*. Beginning with prism No. 1, the base is placed over the insertion of the inferior rectus; if one image still is seen, prism No. 2 is placed in the same position. The strongest prism that is overcome with its base in this direction indicates the power of the superior rectus—*sursumduction*.

The strongest prism that can be overcome with the base placed upward indicates the power of the inferior rectus—*deorsumduction*. The same procedure is employed immediately over the left eye.

1.—Homonymous diplopia having been caused, the images were found to stand in the same horizontal plane. Testing the power of each vertical muscle separately, I found:

Right Eye.—Power of superior rectus, 2°; power of inferior rectus, 2°.

Left Eye.—Power of superior rectus, 2°; Power of inferior rectus, 2°.

2.—The images were shown to be in the same horizontal plane when homonymous diplopia was caused. The power of the vertical muscles was as follows:

Right Eye.—Power of superior rectus, 1°; power of inferior rectus, 1°.

Left Eye.—Power of superior rectus, 1°; power of inferior rectus, 1°.

3.—Examination for hyperphoria discovered the fact that the *left* image stood *higher* than the *right*.

Right Eye.—Power of superior rectus, 3°; power of inferior rectus, 2°.

Left Eye.—Power of superior rectus, 2°; power of inferior rectus, 2°.

As stated by Dr. Stevens, when the left image stands higher than the right there is *right hyperphoria*. It will be seen above that the vertical muscles of the left eye are in a state of equal tension. This eye is, then, the standard from whose plane the other deviates. It will be seen that the power of the superior rectus of the right eye is 3°. This gives an upward tending to this eye, and the adjective *hyperphoric* applied to the right eye is in this case eminently correct. As the right eye is inclined upward by the over-power of the superior rectus, the image of the object falls upon the retina above the macula lutea, and hence is projected to a plane lower than that of the image of the left eye. It was stated that the left image stood higher than the right. It might also be stated conversely that the right stood lower than the left. In the "Treatment of Hyperphoria" it has been stated that, in this condition, that muscle should be tenotomized which forces the eye out of its proper direction; that in right hyper-

phoria, as in the above-cited instance, one may tenotomize the superior rectus of the right eye or the inferior rectus of the left; that the superior rectus is, as a rule, preferable. To tenotomize the inferior rectus of the left eye in the above-mentioned case, according to the demonstrations of this paper, would be unreasonable, for then equal tension in each eye would be disestablished, and, assuming that 1° is taken from the muscle by the tenotomy, there would remain the following valuations:

Right Eye.—Power of superior rectus, 3°; power of inferior rectus, 2°.

Left Eye.—Power of superior rectus, 2°; power of inferior rectus, 1°.

Apparently the evil would not be remedied by such a procedure. A tenotomy of the superior rectus of the right eye would be the correct procedure in this case, and, assuming that exactly 1° was removed from its power, there would then exist equal tension in each eye.

4.—Examination for hyperphoria revealed the fact that the left image stood higher than the right. The following valuations were found:

Right Eye.—Power of superior rectus, 1°; power of inferior rectus, 1°.

Left Eye.—Power of superior rectus, 1°; power of inferior rectus, 2°.

The left image stood higher than the right; according to the teachings extant, the diagnosis of *right hyperphoria* should be made.

It will be seen that there is equal tension of the muscles of the right eye; the left eye is here at fault, and the guilty muscle is the inferior rectus. By its overtension it pulls the anterior pole of the eye downward, and consequently the posterior pole is rotated upward; the image, falling below the macula lutea in this eye, is projected higher than the image of the right eye.

Shall the diagnosis of *right hyperphoria* be made in this case? The diagnosis should be *left hyperphoria*. According to the present teachings, it would be best to tenotomize the superior rectus of the right eye, for it was found that the left image stood higher. But the fact that the left image stands higher is not due to the tending of the right eye upward, but to the tending of the left eye downward. Clearly there could be only one reasonable operative procedure, and that would be tenotomy of the inferior rectus of the left eye.

If a suppositional power of 1° could be taken away from the inferior rectus of the left eye, equal tension of the muscles of each eye would be established.

That the face of a person will at times give some idea of the existing refractive condition of the eyes is well recognized. A flat face is said to indicate the probability of hypermetropia; a prominent face, the probability of myopia; a symmetry of the face, the probability of astigmatism.

Recently, in making examinations for hyperphoria, I have observed that the eyes are frequently situated in different horizontal planes in the skull. After my attention was awakened, I observed numerous cases in which the difference was most striking, and have come to wonder how I could have failed to notice it before. If any one has called attention to this fact before, in connection with insufficiency or supersufficiency of the vertical straight muscles, I am not aware of it.

Now, if the eyes are situated in different horizontal planes, and equal tension of the vertical muscles of each eye exists, it is evident that the same image can not be formed on the macula of each eye. If, for instance, the right eye is situated higher in the head than the left, an image which is formed on the macula of the left eye will be formed *below* the macula of the right eye, equal tension of the vertical muscles being supposed. The right macula under such circumstances should be rotated downward in order to catch the image; this can be done by an overtension on the part of the superior rectus of the right eye. Such overtension can not be regarded in the

^{*}Movement up.

" down.

light of guilt, but rather as an honest effort on the part of the superior rectus to furnish its master with single binocular vision. I select two cases of this condition of affairs.

5.—The right eye was situated higher in the skull than the left. Horizontal homonymous diplopia having been caused, the left image was found to be the higher.

Right Eye.—Power of superior rectus, 2° ; power of inferior rectus, 2° .

Left Eye.—Power of superior rectus, 2° ; power of inferior rectus, 3° .

The right eye must be accepted as the standard; an image that falls on its macula must fall *above* the macula of the left eye, were it not for the inferior rectus of the latter, that pulls the eye downward and carries the macula upward to meet the image at the trysting-place. In this way single binocular vision is attained by an overtension on the part of the inferior rectus of the left eye. An operation upon either the superior rectus of the right eye or the inferior rectus of the left would be quite out of the question. This patient had been examined by two other gentlemen, and the diagnosis of *right hyperphoria* had been made by each; one suggested clipping the tendon of the superior rectus of the right eye.

Although the patient had a considerable refractive error (H), he had no symptom of asthenopia save a little heaviness of the eyes at night when reading.

6.—The left eye was situated in a higher plane than the right. Homonymous diplopia having been caused, the right image was found to be the higher.

Right Eye.—Power of superior rectus, -1° (= less than 1°); power of inferior rectus, 1° .

Left Eye.—Power of superior rectus, 1° ; power of inferior rectus, 1° .

A prism of 1° with its base placed upward over the right eye was overcome. Prism 2° could not be overcome. Prism 1° , with its base down over the same eye could not be overcome; value of superior rectus less than 1° .

The left eye must be taken as the standard; this eye lay higher in the skull than the right. An image that falls upon the macula of the left eye will fall above the macula of the right. The superior rectus of the right eye, appreciating the condition of affairs, gracefully yields, thereby permitting its opponent to pull the eye downward and throw the macula upward till single binocular vision is attained.

This patient evinced refractive errors in both eyes and complained of asthenopia on reading at night. The errors were corrected and relief was given. I have in my record-book twenty-three cases in which I have made the examination for "hyperphoria." The position of the images has been explained in all save three. In one of these I found equal tension in the muscles of each eye, but one image stood higher than the other. This may be accounted for by an unintentional twisting of the displacing prism. In the two others there seemed to be irregular clonic contraction of the vertical muscles, as was attested by different valuations obtained on several occasions.

A difference in the height of the eyes has been observed in five cases. I had not commenced to observe this peculiarity till I had made fourteen examinations for "hyperphoria." Of the above-mentioned five cases, three have been marked for compensatory overtension on the part of one of the vertical muscles. The two others are anomalous.

I cite one of the latter:

7. The left eye lies in a higher plane than the right. The left image is found to be higher than the right.

Right Eye.—Power of superior rectus, 2° ; power of inferior rectus, 1° .

Left Eye.—Power of superior rectus, 2° ; power of inferior rectus, 2° .

We must accept the left as the standard eye. As the left eye

lies higher than the right, an image that falls upon its macula ought to fall *above* the macula of the right eye. We should expect the inferior rectus of the right eye to show the greater power, but it does not. The compensation for the difference in height of the eyes is not shown in this case.

Of the five cases in which there was a difference in the height of the eyes, the left eye lay higher than the right in four instances.

Although *every* case of hyperphoria examined by me has not been satisfactorily explained by the method of examination herein suggested, nevertheless it seems to me that a sufficient number have been explained to warrant the statement of results. Anomalies in the action of the ocular muscles are not infrequent, and under the circumstances we must look to such conditions for the explanation of some results.

1.—There is a condition in which the eyes lie in the same horizontal plane, the tension of the vertical muscles of each eye is equal, and the visual lines lie in the same plane.

For the want of a better term I would call this condition *isophoria* (*ἴσος*, equal; *φóρος*, a tending).

2.—There is a condition in which the eyes lie in the same horizontal plane, the tension of the vertical muscles of one eye is equal, and that of the same muscles of the other eye is unequal. Under such circumstances the visual line of one eye tends to deviate from that of the other, which is the standard; if the deviation is downward, the condition may be called *vicious hypophoria* of that eye; if the deviation is upward, the condition may be known as *vicious hyperphoria* of that eye.

3.—There is a condition in which one eye is situated higher in the skull than the other; there must be a compensatory overtension of one vertical muscle in such cases, in order to accomplish single binocular vision. Such overtension should not be considered as *vicious*, but rather as *compensatory*.

The terms *compensatory hyperphoria* and *compensatory hypophoria* may then be applied to any appropriate case that comes under the latter condition.

I have published the fullest details on weak conditions of the vertical muscles. I think the subject is receiving more attention than is due it. We certainly have weak conditions of the vertical muscles which cause severe asthenopic symptoms. If the person require a lens constantly to correct a refractive error, then a prism can frequently be combined with the lenses which favors the inferior rectus of the eye which has a too powerful superior rectus.

In all but excessive cases it is better to produce the muscular balance by taking power away from the superior rectus of one eye, rather than the inferior rectus of the other eye, because the eyes are most severely and commonly used on a plane which is level with them or below them; rarely are they used continuously on a plane which is higher than their level.

In individuals requiring no lenses for the correction of their refractive errors, the question of prisms for the simple correction of their muscular defects is questionable when the defect can be corrected by tenotomy without lenses. In some cases prisms relieve the difficulty entirely, in others they are not tolerated, in which case tenotomy is resorted to. Practical experimental trial is the only way to answer the question as to the advisability of their use.

The classes in optics will commence in the early part of September. Persons desiring to learn practical optics correctly, quickly and thoroughly, should give timely notice of their intentions to join the class.

Over one hundred students have received instruction and they are all doing well.

† TO TIGHTEN A CANNON PINION.—All that is necessary is to roll the staff gently between two files. I deem this preferable to raising a burr with cutting pliers, as is often done, and there is less liability of bending the staff.

Our Next International Exposition.



HE PROPOSITION, to which we have heretofore alluded, of holding an international exposition in 1892, in commemoration of the four hundredth anniversary of the landing of Columbus on American shores, is gradually taking definite form and shape. Congress has already taken favorable action on the bill presented by the promoters of the plan, and an appropriation of \$25,000 has been recommended for the purpose of forwarding the preliminary organization. The bill provides for a permanent scheme of organization under the auspices of the government. A board of directors, consisting of nine persons to be appointed by the President, is to be the executive power, with an advisory board of sixty-two members, representing forty-six states and territories and sixteen independent American nations, will act in co-operation with the government board of directors. While the nations of the American continent will be the chief factors in the exposition, it will have a general international character, and the nations of Europe will be invited to participate.

It is already announced that Congress has decided to hold the Exposition on the government land which has been reclaimed from the Potomac flats at Washington. While there is no question that its location in the vicinity of New York would offer greater attractions to everybody, and facilities for coming and going that no other city in the country possesses, yet Washington will be less objectionable on the score of accessibility than any inland city. Among the things that Congress seems to have determined upon is the erection of one building to be maintained for the permanent exhibition of the history, resources, arts and industries of the United States. Others will be devoted to the exhibition of the antiquities, industries, etc., of Brazil, Canada, and the fifteen Spanish-American Republics and smaller States and Colonies. A statue of Columbus is recommended by the House committee that has had the matter under consideration. The promoters of the plan, however, expect to arrange for various other buildings for the display of working models of American inventions, etc., for a museum, for temporary exhibits, and also for suitable buildings and grounds for a zoological garden. As time passes, and the co-operation of other governments is assured, the plan will be developed as circumstances require, and the probability is that the Exposition of 1892 will be the most extensive and complete of any that has ever been held in any country. Spain and Italy, as well as several of the South American countries, have already expressed their willingness to participate in the celebration, and Spain will commemorate also, in an independent manner, this great event in the world's history.

Between the Philadelphia Centennial and the Columbus Anniversary of 1892, fourteen years will have elapsed; between the Paris International Exposition of next year and the Columbus celebration, three years will have passed, so that all nations will be in a good condition to exhibit the proficiency they have made in the arts and sciences during the intervening time. The Philadelphia Exposition was one of the most successful of the entire series of world's fairs, and did more than all the others combined to instruct and develop the artistic taste of American workmen. It bore most excellent fruit in the jewelry trade and kindred industries, and now, after the lapse of fourteen years, it will be a most excellent thing for our workmen to have the opportunity to exhibit to the world the proficiency they have made. If the 1892 exposition is to accomplish all that it should do, there is no time for delay in perfecting the arrangements for it. All the states and territories, as well as the governments of neighboring nations, will have to take official action on the proposition, and make their plans to be creditably represented. The scheme should be so matured that it can come before the legis-

lative bodies of the governments and states interested at the coming sessions this winter. After that, the various industries, trades and sciences have to be interested in the matter, and popular enthusiasm aroused. If properly managed, the projected Columbus anniversary can be made the means of developing more intimate relations between this country and our neighbors at the southern extremity of the continent, and new markets opened up to our manufacturers and dealers. The proposition is one that should enlist the active sympathy of every man who has any interest in the industrial welfare of our country.

Gilding and Gold Plating.

Continued from page 35, July, 1888

TESTING A DEPOSITING LIQUID.



FROM WHAT has just been said, the mode of testing is obvious: To test it pass a current from two or three of Smee's cells through it, by clean and weighed anodes and cathodes, the latter being composed of the particular metal which it is intended to coat. Observe the quality of the deposit, the speed of deposition and whether much gas is evolved from the electrodes. Set a portion of the clear liquid aside in a colorless glass vessel, exposed to light and air, and observe if it acquire a film, deposits a sediment, changes in color, evolves gas or shows any other signs of decomposition. Immerse in a separate portion for about one-quarter of an hour (that will be an abundance of time) a bright and perfectly clean piece of metal of the kind to be deposited, and observe if it is coated with the dissolved metal or changes in appearance in any way. A liquid which requires a strong current to make it yield its metal freely or which liberates gas at the cathode, but has no other defects, does not harm, except being wasteful of the electric power. One which evolves gas at the anode becomes gradually deprived of its dissolved metal.

Practical Management of Depositing Solutions.—Having obtained a good depositing liquid, we must manage to keep it so; because a large vat of silver solution or a vessel of gilding liquid is valuable. The operator should, as far as possible, avoid doing anything to such liquids which will alter their chemical composition; many valuable ones have been injured and spoiled by persons (unused to making careful experiments) adding substances to them with the hope of improving them. The tales told by electro-platers of their experiences with depositors in making and mending electro-gilding solutions should act as warnings to those about to commence in the art upon a large scale. One discovered that the operator, by using cyanide of potassium, regardless of strength, to make cyanide of silver, re-dissolved about sixty ounces of silver and threw it away in the wash water. Another had a similar mishap with eleven ounces of gold. A third had 450 ounces of silver converted into waste residue. A fourth had two large vats of silver solution rendered incurable by addition of too much "brightening" liquid, and many electro-platers have had similar mishaps. Others have found their anodes dissolve with extraordinary rapidity through the use of too much free cyanide, or by allowing them to remain in contact with the iron vat, and have been surprised to find that a solution which, when made, contained only one ounce of silver per gallon, held in solution more than four times as much. Others, by keeping a record

of the silver dissolved and deposited, as well as of that found in the liquid by analysis, have missed a considerable quantity, and ultimately found that it had soaked into the sides of the thick wooden vats. The composition of a depositing solution should not be altered, except so far as it can be done with perfect safety, as by diluting it to a certain extent with water, or adding materials to exactly replace those abstracted from it. The electric power should always be adapted to the liquid, and not the latter to the electric power. The electrodes should, as a rule, be kept nearly equal in amount of surface, the anode being, in some cases, the largest; and the quality of the deposit should not usually be regulated by altering their proportionate extent of surface, but by altering the battery or other source of the current.

As a general rule, in order to prevent depositing liquid becoming contaminated with foreign metals, any metal which will be corroded by a particular depositing liquid (and which will therefore coat itself by simple immersion in that liquid), should previously receive a coating of suitable metal in a preparing solution; for instance, iron articles, which are to receive a thick coating of copper, are first coated with a thick film of that metal in a cyanide liquid.

Anodes of any metal may be formed of scraps, but that is not advisable if better ones can be obtained.

Proper Position of Articles and Dissolving Plates in the Vats.—Both the articles and the plates should be wholly submerged in the liquid, the former being a little the deepest. Both should be vertical or nearly so; the plates may, however, overhang a little with advantage; it makes them dissolve more evenly. The horizontal position, with the dissolving metal above, although the most scientifically correct arrangement, does not succeed in practical working, because the metal used for dissolving is never quite pure (with nickel and copper especially), and the impurities from it fall upon the surface of the receiving article underneath and make it rough; in addition to this the position of the article prevents its being easily removed or examined. If the object to be coated has a very irregular outline, either the dissolving plate should be bent somewhat to its form, so that the two may be nearly equidistant at all parts; or the article should be often shifted in its position so as to produce a nearly uniform thickness of coating all over. The nearer the receiving surface is to the dissolving plate the more rapid is the deposition, and a large body of liquid deposits more rapidly and more evenly than a small. The greatest thickness of coating always takes place upon the most prominent places—that is, upon those parts nearest the dissolving metal. If it is desired to prevent vertical lines in a thick deposit, the object must be kept in motion.

Motion of the articles is very dangerous; it permits much more deposition, it keeps the solution much more uniform in composition, prevents the lower portions of the objects being coated so much faster than their upper, and also prevents the upper parts of the anodes being dissolved so much more rapidly than their lower. In addition to this, by keeping the solution mixed, it greatly diminishes the electric conduction resistance, which would be produced by polarization, due to layers of liquid of opposite electrical nature, collecting in contact with the electrodes.

As most of the deposit takes place upon the parts of the article nearest the dissolving plate, if other parts require also a thick deposit, the article must be so placed or an anode must be employed of such a shape as to effect that object.

Regulation of the Deposit.—Regulation of the quality of the deposited metal is always an important matter, and with all metals, except a very limited number, it is one of the most difficult objects to effect. As a general rule, the greater the electro-motive force and the smaller the quantity of the current, the harder and brighter is the deposited metals; but this, of course, only holds good in the case of a liquid which is capable of yielding such metal. The chief points are, first, to obtain a good liquid at the proper temperature, and, second, to adjust the density of the current until the required kind of deposit is obtained. Some liquids are so constituted (especially

those of the more oxidizable base metals, such as manganese), that if the current is only of sufficient density to deposit it in a bright reguline state, it is not sufficiently dense to prevent the metal at once taking up oxygen and forming a sub-oxide. If, in a good depositing solution of a non-readily oxidizable metal, such as copper, we are producing by means of a current of considerable electro-motive force a black powder deposit, upon a very small article, a much larger article would receive by the same current a reguline deposit, and upon a very much larger one the deposit would be hard and crystalline. So much, however, depends in every case upon the special characteristics of the particular liquid, that these can only be considered as general instructions for the guidance of the electro-depositor.

The action of a current of great electro-motive power, but small in quantity, appears in some cases (for instance, with copper), to confer upon the deposited particles a kind of polarity, a power of grouping themselves into separate warty nodules or groups of crystals, each of which, as it becomes larger, appears to powerfully repel all particles in its neighborhood, and thus causes the metal to spread rapidly; when this action is continued to a considerable thickness of deposit, especially in cold water, the metal is exceedingly hard and easily broken into a number of distinct grains or nodules, which are in the form of lumps with rounded edges. With a current from 100 pairs of Smee's battery, acting for a long period of time in cold weather, and the quantity of the current kept down to the lowest possible degree, I have seen a tough deposit of zinc spread over several square inches of clean gutta percha; and in depositing copper by a current of rather high intensity and small quantity upon black-leaded gutta percha medallions, I have repeatedly observed that where there was a sunken boundary line near the edge the deposit remained quite thin, as if powerfully repelled, whilst on each side of the line it was very thick, and on the outside edge accumulated in large masses, and distinctly separate, and containing as much metal as the whole of the medallion besides. The effect of lines is often seen in electro-copies of set-up type, and the deposits are very fragile in those parts.

(To be Continued.)



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THE JEWELERS' CIRCULAR is the official paper of the Jewelers' League and has been selected for the publication of all matters of interest pertaining thereto. Letters or inquiries pertinent to its business or purposes, and which might interest the trade or inquirers, will herein be answered. Address *Jewelers' League, Box 3,444, P. O., New York*, or the office of THE CIRCULAR.

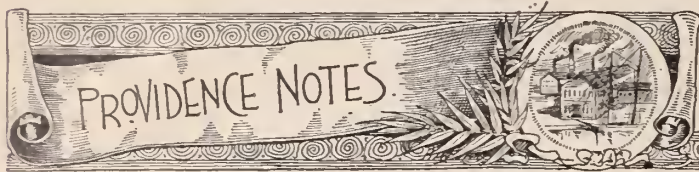
The regular monthly meeting of the Executive Committee of the Jewelers' League was held on Friday, July 6. There were present

Vice-Presidents Bowden, Lewis and Johnson, and Messrs. Bardel, Greason and Sexton.

In the absence of Mr. Howe, Mr. Bowden occupied the chair.

Requests for change of beneficiaries were granted to four applicants.

The following named applicants were accepted: Levi M. Algase, of Whitney's Point, N. Y., recommended by E. D. Vosbury; Samuel A. Collins, of Washington, D. C., recommended by Wm. Bardel; Geo. Vanelman, of New Rochelle, N. Y., recommended by J. J. Bowden.



[FROM OUR SPECIAL CORRESPONDENT.]

PROVIDENCE, July 15, 1888.

The dullness of a month ago has, in a measure, disappeared, and business has improved noticeably, quite a spurt having taken place about the middle to the last of June, which has died out considerably during the past ten days. Buying for the time being was of a more general character than during the opening of the fall trade of 1887, but the orders were for smaller amounts, as a general thing, showing that the conservative tendency to buy only what is really required by the jobber is still being adhered to, which would seem to point to the fact that he is doing a careful and judicious business, and will be able to meet all his liabilities promptly at the end of the season. The manufacturer is always pleased to feel that such is the status of the jobber in regard to him, after carrying accounts for, say, from a year to a year and one-half without seeing the color of his money, it is really gratifying to know that the account is still there and almost as safe as though invested in government bonds. From all signs at present at home the prospects for a fair fall's business are really quite good, but those who look for a great rush will most likely find that they have made a sad mistake in figuring. They should remember that this is presidential year (which is invariably bad for business) and that the great tariff question issue is not settled yet; besides the strikes West, closing down of carpet, woolen and rolling mills all over the country has an effect on the business to make it poor during the balance of the year. Already one can hear the remark made amongst the jewelers that it is beginning to be very dull with them, which can be taken as "straws which show in what direction the winds blow." Collections have been more than poor during the past month, and seem to have been lost sight of altogether in the excitement of finishing up the presidential nominations. Failures, too, have had an easy time of it, as none of any consequence have occurred during the month, and there seems to be a pleasant lull in this monotonous direction of the past spring to the entire satisfaction of the manufacturers.

The Chace-Arnold building is fast approaching completion, as the roof is all finished and the flag-staff was in position, and the "Stars and Stripes" floated proudly from it on Independence Day, and it is safe to say that the different firms intending to occupy it, viz., Howard & Son, Hamilton & Hamilton, Jr., Kent & Stanley (successors to W. H. Robinson & Co.), W. R. Lane & Co., The Sterling Co. and others will be able to move in by September 1 at the latest.

The building erected by Mr. Horace Remington, on the corner of Page and Friendship streets, is about ready for occupancy, as the fire-escapes and finishing touches have nearly all been attended to the present week.

Hutchison & Huestis, the gold ring manufacturers, of No. 185

Eddy street, are showing many new and elegant designs in ladies' and gents' rings, and find themselves unable to supply them as fast as required by the trade, their works being driven to their fullest capacity.

Fred. I. Marcy & Co. are unusually busy, being rushed with heavy orders for their "Acme" sleeve button, which appears to be more popular than ever with the jobbing trade all over the United States.

Geo. L. Vose & Co., of No. 59 Clifford street, report business booming in the bracelet line, and although a little more quiet than a fortnight ago, still have enough orders on hand to keep them running comfortably for some time.

William H. Luther & Son are rushing the campaign badge business at No. 140 Oxford street, having all the orders on hand that they are able to handle. For cheap badges they beat the world, those that sell by measure rather than by gross or dozen.

Howard & Son, of No. 102 Orange street, tendered to their employees an excursion and dinner at Crescent Park, Narragansett Bay, on Monday, which was appreciated by them.

Charles G. Bloomer & Sons removed from No. 409 Pine street (quarters then have been occupying) to their new building at Pawtuxet on Wednesday, where they are permanently located, and are "as snug as a bug in a rug."

Mr. James H. Bashford, formerly connected with M. Fitzgerald & Co., where he has been the faithful steward for the past seven years, has formed a co-partnership with Mr. James R. Feeley, the enterprising and energetic jeweler of No. 129 Eddy street, under the firm name of James R. Feeley & Co., and will manufacture solid gold goods and plate chain. Mr. Bashford is a young man of great push and energy and will make an able partner in his new position, besides being one of the best salesmen on the road, he having profited immensely under the able and efficient tutorship of Mr. Fitzgerald.

E. F. Kent and A. W. Stanley on July 1 formed a co-partnership under the firm name of Kent & Stanley, as successors to W. H. Robinson & Co., and will continue the manufacture of gold filled chains at No. 108 Eddy street, until their new building, "The Enterprise," is ready for occupancy, on the site of the old "Chace-Arnold" block.

Mr. Olney Dolan and B. Simms, of Attleboro, have formed a co-partnership, and located on Orange street, this city. Mr. Simms will represent the new firm on the road.

Mr. Samuel Moore has removed to No. 178 Eddy street, on the corner of Friendship street.

Mr. Henry Tilden, of Tilden, Thurber & Co., has returned from Europe after a business sojourn of two months, well, and much pleased with the trip.

The suit of Mr. Horace Remington vs. Samuel Carpenter, brought up in the Court of Common Pleas to-day, the plaintiff sues to recover \$94.72 with interest, alleged to be due for fine gold and silver ordered by the defendant through his foreman. Suit is still pending. Ballou & Jackson are the lawyers engaged by the plaintiff, and A. E. West for the defendant.

The suit of Mr. Chas. S. Pine vs. the "Stonington Line," as reported in the July number of THE CIRCULAR, will soon be argued before the Court of Appeals.

S. K. Merrill & Co. have removed to Pawtuxet, and will occupy quarters with C. G. Bloomer & Sons in their new building just finished.

Mr. A. V. Blake, of the late firm of Blake & Bradley, has removed from No. 170 Cove street to No. 14 Page street.

W. A. Beatty & Co. are now completely settled at their new quarters at No. 61 Peck street.

Mr. M. L. Read has located his new factory at No. 118 Dorrance

street, where he will make a specialty of white stone goods in gents' scarf pins and ladies' brooches.

Mr. John H. Collingwood has removed from No. 44 Page street to No. 107 Friendship street.

Mr. S. Wolf, of the firm of Simons & Wolf, of Philadelphia, which failed some three years ago, has agreed, through the Board of Trade, to settle with their creditors on the basis of twenty-five per cent. of their claims, which has been accepted.

The inventory of the estate of the late Mr. John P. Luther was accepted at \$11,357.59, and the administrator authorized to close it out accordingly.

As the city has re-numbered Broad street, the addresses of some of the manufacturers are necessarily changed, viz.: Fanning & Potter and Thornton & Co., changed to No. 137 from No. 125; G. H. Cahoon & Co., Hearn & Braitsch, C. S. Pine & Co., D. & M. Bruhl and H. A. & G. M. Church to No. 125 from No. 111.

Mr. Walter A. Gardner is having built for himself at Elmwood a "Queen Anne" cottage, to be finished in the early autumn.

Mr. G. B. Stratton has succeeded Chapman & Hunt at No. 35 Point street.

Mr. John L. and Joseph L. A. Fowler spent the most of the month of June at home in New York State with their mother at the family residence.

Mr. John A. Fleming is rustivating at Riverside during the heated term.

Mr. W. H. Ryder, the able representative of the Scovill Manufacturing Co., was in town the past week, and reports business as being in a very satisfactory manner.

It is with a sense of deep regret that we announce to the hosts of friends of Mr. Charles Z. Read, the death of his lovely sister at her home in New Jersey after a short illness. He has our heartfelt sympathy in his sad bereavement.

The trade was shocked to hear on the 24th ultimo, with feelings of regret and sadness, of the death of Mr. James A. Young, of the firm of Flint, Blood & Young, at his summer residence at Conanicut Park. Mr. Young was universally popular with all, either in a social or a business manner, and his friends were as the leaves on the tree, and to be once his friend, always so. Apoplexy was most likely the cause of his sudden death, at the age of about forty-six years. Mrs. Young has the sympathy of the trade in the sad loss of her husband.

The Manufacturing Jewelers' Board of Trade held their regular quarterly meeting on Saturday, June 30, at 1 P. M., at No. 9 Wilcox Building, No. 42 Weybossett street, this city, but no business was transacted. At their special meeting held on July 7, the name of the Davis & Rudd Co., of No. 96 State street, Chicago, was placed on the "repudiated list." Members will please take note of same.

Mr. Charles H. Downs has recovered from his late indisposition, and is again seen on the street. He will pass the summer at Field's Point with his family, where he has taken a cottage.

T. C. Tucker & Co., of No. 111 Summer street, have been succeeded by Tucker & McLane. Mr. McLane was formerly of the firm of Norton & Co.

FAIRFAX.

To Replace the Great Wheel.

THE GREAT wheel will necessarily have to be replaced by one correctly proportioned to center pinion, says E. Britten, in an exchange. Suppose the wheel has seventy teeth, which is generally the number, and that a larger wheel is not admissible, then it will be necessary to either fit a new wheel of the same diameter as the old one, but having fewer teeth, or else fit a new one having the same

number of teeth and replace the center pinion as well with a smaller one. This is sometimes, but not always, possible. In this case we fit a new wheel only. Proceed as follows:

Measure the distance between the great and center wheel pivot holes, which we will suppose is 9.75 inches (this measure is according to a diagram accompanying; of course, it will be understood that this distance is about twenty times greater than in the watch proper, but the diagram had to be enlarged to show it distinctly, so the calculations have been made accordingly, which may be reduced to working size afterward.)

The radius of the center pinion is 1.25 inches, measuring to the pitched circle line, therefore the radius of the great wheel will be 8.5 inches, measuring to the pitch line. Then if the center pinion has ten leaves and a radius of 1.25 inches how many teeth should the great wheel have, having a radius of 8.5 inches? The proportions will be as follows: 1.25 (pinion radius); 8.5 (wheel radius): 10 (pinion leaves); 68 (wheel teeth). Therefore, to obtain a correct depth in this case, the great wheel should have 68 teeth.

Solders and Soldering.



OLDER IS AN alloy employed to unite, by the aid of heat, two metallic bodies that are placed in contact. A solder, then, must be more fusible than the metals it is intended to unite, otherwise they would be damaged by the degree of heat applied. Solder is all the less tenacious and melts the more easily according as the proportion of the most fusible metal present is increased. This fact is taken advantage of when several solderings have to be performed on the same object. The alloy last employed will require to be considerably more fusible than the first, as otherwise the heat would be so great that the earlier joints

would melt. In an ordinary lead and tin solder the fusibility is increased by increasing the proportion of the latter metal, till the lead is to tin as 6 : 1. This alloy melts at 194° C. (380° F.), and the fusing point may be still further reduced by adding a gradually increasing proportion of bismuth.

As the melting point of the solder approximates to that of the metals to be united, the risk of damaging the latter is, of course, increased, but, at the same time, the joint will be all the stronger, as the metal will be almost as strong there as at any other point, and it can be forged, etc.

Solders are distinguished as *hard* or *soft*; the former requires the application of a red heat, and can therefore be used only for such metals as gold, silver, brass; whereas the latter melt at very low temperatures, and can be employed for metals that have low melting points, or where it is important not to exceed a moderate degree of heat. The joint is, however, the more solid according as the heat employed approximates to that at which the metal will melt.

Composition of Solders.—The solders ordinarily employed can be obtained at material stores, but it is advisable to give here the composition of some of the more important, specifying the metal to which they are applicable.

Aluminum Solders.—I. Zinc, 70 parts; copper, 15; aluminum, 15.

II. M. Mourey employs a series of aluminum-zinc alloys, commencing with 2 per cent. aluminum to 98 per cent. zinc, and

progressing to 20 per cent. of the former to 80 per cent. of the latter metal.

Gold Solders.—I. Gold, 6 parts; copper, 1 part; silver, 2 parts.

II. Gold, 15 parts; silver, 2 parts; copper, 1 part.

III. Gold, 11.94 parts; silver, 54.74 parts; copper, 28.17 parts; zinc, 5.81 parts. The first three metals are melted together in a crucible, and when they have somewhat cooled, a somewhat greater proportion of zinc than is here indicated (to allow for loss by volatilization) is added and the alloy constantly stirred.

IV. Gold, 6 parts; silver, 1 part; copper, 2 parts.

Soft Gold Solder.—Gold, 4 parts; silver, 1 part; copper, 1 part.

V. Gold, 2 parts; silver, 1 part; copper, 1 part.

VI. Gold, 3 parts; silver, 3 parts; copper, 1 part; zinc, $\frac{1}{2}$ part.

Gold Sol'er for 14 and 16 Karat Work.—Gold coin, 1 dwt.; pure silver, 9 grs.; pure copper, 6 grs.; brass, 3 grs.

Darker Color.—Gold coin, 1 dwt.; pure copper, 8 grs.; pure silver, 5 grs.; brass, 2 grs.; melt together in a charcoal fire.

JEWELERS' ALLOYS.—*Eighteen Karat Gold for Rings.*—Gold coin, 19 $\frac{1}{2}$ grs.; pure copper, 3 grs.; pure silver, 1 $\frac{1}{2}$ grs.

Cheap Gold, 12 Karat.—Gold coin, 25 parts; pure copper, 13 $\frac{1}{2}$ parts; pure silver, 7 $\frac{1}{2}$ parts.

Very Cheap, 4 Karat Gold.—Copper, 18 parts; gold, 4 parts; silver, 2 parts.

Imitations of Gold.—I. Platinum, 4 parts; pure copper, 2 $\frac{1}{2}$ parts; sheet zinc, 1 part; block tin, 1 $\frac{3}{4}$ parts; pure lead, 1 $\frac{1}{2}$ parts. If this should be found too hard or brittle for practical use, re-melting the composition with a little sal-ammoniac will generally render it as malleable as desired.

II. Platinum, 2 parts; silver, 1 part; copper, 3 parts.

These compositions, when properly prepared, so nearly resemble pure gold that it is very difficult to distinguish them therefrom. A little powdered charcoal, mixed with the metals while melting, will be found of service.

Best Oroide of Gold.—Pure copper, 4 parts; sheet zinc, 1 $\frac{3}{4}$ parts; magnesia, $\frac{5}{8}$ part; sal-ammoniac, $\frac{1}{2}$ part; quicklime, $\frac{3}{8}$ part; cream of tartar, $\frac{7}{8}$ part.

First melt the copper at as low a temperature as it will melt; then add the zinc, and afterward the other articles, in powder, in the order named. Use a charcoal fire to melt these metals.

Silver Solders.—I. Silver, 2 parts; brass (for pin wire), 1 part.

II. Silver, 5 parts; pin wire brass, 1 part.

III. Silver, 10 parts; pin wire brass, 5 parts; pure zinc, 1 part.

IV. (For the use of jewelers).—Fine silver, 19 parts; copper, 1 part; sheet brass, 10 parts.

V. *White Solder for Silver*—Silver, 1 part; tin, 1 part.

VI. *Silver Solder for Plated Metal.*—Fine silver, 1 part; brass, 10 parts.

VII. Silver, 2 parts; brass, 1 part, with borax; or

VIII. Silver, 4 parts; brass, 3 parts; zinc, $\frac{1}{8}$ part, with borax.

Solder for Brass.—Copper, 3 parts; zinc, 1 part, with borax.

For Platinum—Gold, with borax.

For Iron.—The best solder for iron is good tough brass, with a little borax.

For Copper.—Brass, 6 parts; zinc, 1 part; tin, 1 part; melt all together, mix well and pour out to cool.

Cold Solders.—I. Copper, 24.24 parts; silver, 27.57 parts; gold, 48.19 parts.

II. *Enamel Solder.*—Copper, 25 parts; silver, 7.07 parts; gold, 67.93 parts.

III. Copper, 26.25 parts; zinc, 6.25 parts; silver, 31.25 parts; gold, 36.25 parts.

IV. Silver, 19.57 parts; gold, 80.43 parts.

Tin Solders.—I. (Ordinary soft solder). Tin, 2 parts; lead, 1 part.

II. (Harder, and known as "plumbers' sealed" solder). Tin, 1 part; lead, 2 parts.

III. Many other proportions of tin and lead are occasionally used, ranging from tin, 1 part; lead, 25 parts; to tin, 6 parts, lead, 1 part.

IV. (Very fusible solder melting in boiling water). Lead, 3 parts; tin, 5 parts; bismuth, 8 parts; the fusibility is still further increased by adding mercury or cadmium.

Spelter Solders.—(Used for brazing). Copper and zinc in varying proportions. It becomes more fusible as the amount of zinc present is increased.

METHOD OF SOLDERING.

A thorough cleansing of the surfaces to be united is always necessary, but more especially so in the case of soft soldering. It may be effected by means of acids or with a graver, scraper, etc.; the cleaned surfaces must not be touched with the fingers, and the soldering should be done at once. If acids are employed, the objects should be thoroughly washed after soldering in order to avoid rust; and, after drying, they should be rinsed with alcohol.

The parts to be soldered are held in position with clamps, tweezers, pins or iron wire. This latter, known as *binding wire*, is used for delicate objects and should be very pliable. When a high degree of heat is to be applied, all risk of the iron uniting with gold may be avoided by mixing a little sandiver with the borax employed.

Before heating, if there are already parts united with solder, they should be covered with borax to prevent softening.

Only a moderate heat should at first be applied, so as to melt the borax or sal-ammoniac without displacing it. The violent frothing up, which is very liable to displace the parts or the fragments of solder, can thus, in greater part, be avoided. If a naked lamp flame is used, or if it is directed on to the object with a blowpipe, it should be, so to speak, large and soft, and the jet should not be directed to the point of juncture until it is observed that the solder has fused. In soldering brass to steel it is sometimes necessary to direct the flame against the brass only in order, as far as possible, to avoid softening the steel. The hard solder for gold, silver, etc., requires a considerable degree of heat, so that the objects must be heated to redness.

To solder gold and platinum to each other or to themselves.—On a hard wetted surface, marble, for instance, rub a piece of borax until a white liquid paste is obtained (or the powdered borax sold by chemists can be made into paste direct). Having prepared the borax the surfaces to be united are cleansed either by scraping or with dilute nitric acid; the acid may be previously heated to boiling, as it will then act more rapidly; and the surfaces are subsequently scraped. They are now covered with the borax with a paint brush, set in position, and small pieces of solder placed on the junction. As already observed, the heating must at first be gentle to avoid displacing the solder by the frothing of the borax.

To Solder Silver.—Also for uniting gold to silver, or silver, brass, steel to each other or to themselves. Proceed in the manner already explained for gold and platinum, except that the borax paste must be sensibly thicker.

To Solder Tin.—Also for uniting gold, silver, brass to each other or to other metals, such as steel, iron, etc. Clean the surface with a graver or scraper; sulphuric or hydrochloric acid may be used, but in this case the cleansing afterwards must not be forgotten.

The heating is effected as in soldering gold, unless a soldering iron is used, when the directions subsequently given should be followed.

To Solder Aluminum.—M. Mourey recommends the following methods:

One of the series of aluminum solders before mentioned is employed, and, as a flux, two-thirds of balsam copaiba, one-third very pure Venice turpentine and a few drops of the juice of a lemon; these constituents are pounded together in order to secure a perfect admixture.

The surfaces to be united are covered with solder (employing a soldering iron of aluminum), just as in the case of tinning, the flux just mentioned being used. The two surfaces thus prepared are placed in contact and maintained in the required position, and, after

laying on the joint particles of solder that are richer in aluminum than the one used for preparing the surfaces, the whole is placed over a charcoal fire or heated before the blowpipe, pressing gently on the pieces of solder, which will soon melt, and should be distributed by means of a little tool of aluminum.

During this second stage of the process it is necessary to be very cautious in the application of the flux; the pieces of solder should only be dipped in before being placed in position, for the flux is mainly for use in preparing the surfaces; as soon as this solder has run well the temperature should be lowered, in order not to dry up and burn the solder, which would be apt to become brittle.

In preparing the solders, the aluminum is first fused and stirred with a small iron rod; then add the zinc and stir again; add a little tallow and cast the solder into rods.

The zinc must not be heated too much as it will volatilize, leaving the alloy rich in aluminum and therefore brittle.

Fluxes for Soldering.—Various substances can be employed as fluxes for cleansing the surfaces to be united.

Sal-ammoniac reduced to powder and made into a paste with sweet oil or merely reduced in water.—A paste formed of *sal-ammoniac* and *resin* reduced to powder with water or oil.—*Resin* alone will suffice for the soft soldering of copper or brass.—*Venice turpentine*, which has the advantage of not causing steel to rust, although it makes the objects sticky, so that they require to be afterward rinsed in alcohol or turpentine.

Various acid solutions are sold for the purpose, and experience will enable the watchmaker to select that which is best adapted to his requirements.

Lastly, saturated *chloride of zinc* can be recommended. It is prepared as follows:

Some diluted *hydrochloric acid* (which also goes by the name of spirits of salts or muriatic acid) is placed in a glass flask and strips of zinc are added one by one; the flask must be left uncorked and the zinc added a little at a time, lest the effervescence that occurs should break the vessel. When the zinc added is not acted on by the fluid, it may be concluded that the acid is saturated or "killed," and the fluid may then be transferred to a stoppered or corked bottle for use. In using it a small quantity is spread over the surfaces that are to be united, and the solder will be found to run with great freedom (some authorities recommend the addition of *sal-ammoniac* to the extent of one-fourth the height of acid taken). It is well again to warn the reader that the pieces must be thoroughly washed after employing these liquids, for otherwise they will cause tools with which they are brought in contact to rust, and will rust themselves if they consist wholly or in part of iron or steel. The vessel containing the fluid must be kept well away from the work bench.

The liquid can be used immediately after being prepared as above explained; but all acid reaction may be prevented by evaporating at a moderate temperature until of the consistency of oil; it is then allowed to cool and kept in a bottle.

The *soldering iron* with a head of copper, such as is used by tin plate workers, is well known; if made on a small scale it may occasionally be of service to the watchmaker. The tool may be T-shaped, one end of the horizontal portion, the copper head, terminating in a rather thin blade and the other enlarged, so that when held in the flame of a lamp it will store up a sufficient amount of heat. The upright part of the T corresponds, of course, to the handle. After the iron has been heated just short of redness in the dark, the end of the blade is moistened with soldering fluid and a small piece of solder attached to it. The object to be united is gently heated and also moistened with the fluid; the iron charged with solder is presented to it, often with the enlarged extremity of the head maintained in the flame of a lamp, and the solder will, as a rule, run without again heating the object, although this might be done while the iron is still in contact. It may be found convenient to fix the iron in a suitable position, with the lamp below the large end of

the head; the object will then be brought against the iron after being moistened with the fluid.

It is often advisable to *tin* surfaces to be united previous to soldering them; in order to do this they are moistened with soldering fluid; small pieces of solder are then spread over, and these are fused by passing the hot iron over the surface; or the solder can be spread after fusion by means of a metallic rod charged with the liquid.

Brazing.—This operation consists in soldering iron, steel, brass or copper, with an easily fusible brass, which is specially prepared in the form of coarse dust, termed spelter solder, or cut in thin strips of convenient shape. The method resembles, in all essential particulars, the application of hard solders previously referred to.

Heat is usually applied direct by the blowpipe, borax being used as a flux; it is necessary to avoid a greater degree of heat than would melt the brass, since the object might in that case be fused. For fine work it is better to employ silver solder.

On an emergency, two pieces of steel can be united by brazing and subsequently hardened, and we have successfully practiced this method in such a case as the following: A small portion having been broken off from the quarter-piece of a repeater, we dovetailed into it another piece of steel of the required form, but a trifle too large at the upper side. When the brass had run well into the joint and the piece was still at a full cherry-red heat it was hardened, and afterward cleaned and tempered to a blue color. The upper surface was then brought to shape with a good file, resting it on a wooden block against a projection, and, after making sure that it would act correctly, the whole was smoothed and polished. It has since worked and does not show signs of wear.



[FROM OUR SPECIAL CORRESPONDENT.]

PHILADELPHIA, JUNE 19, 1888.

The unfortunate mental illness of Joseph Muhr is the talk in jewelry circles in this city at present. Among the trade in general it is a great surprise. But few suspected that Mr. Muhr was threatened with so serious an ending to his business career. When he retired from the firm of H. Muhr's Sons a few weeks ago, and sought the rest to which a long and exacting service in the harness had entitled him, it was generally supposed that the rest and relaxation which he would find in a life of repose would be a boon well worth his appreciation. But it seems that with the reaction from business cares the strain gave way in the wrong direction. His family and intimate friends have long feared that his indefatigable labors given to the management of the factory in which the goods of the firm with which he was connected are prepared for the market, and the fineness of his nervous temperament would eventually have their effect upon his mental faculties. There is little doubt but that overwork and over-anxiety in a business sense has been the primary causes of Mr. Muhr's troubles. His close friends in this city, while not greatly surprised at the turn affairs have taken, feel the bitterest regret that their worst fears are realized. Mr. Muhr certainly has the heartfelt sympathy of his former colleagues in business, and they one and all hope for his speedy recovery. It must be confessed, however, that the most sanguine of his friends despair of a permanent cure. The severe strain of overwork, it is feared, has overthrown a mind already enfeebled by a physical breaking down, and the appointment of a commission in lunacy by the local Common Pleas Court, as well as by the New York legal tribunal, which has been given partial juris-

diction in the matter, has convinced most of the people who know him that Mr. Joseph Muhr is doomed to a long period of mental cloudiness, if not total and permanent insanity. His estate is very valuable, and steps will be taken in this city, as soon as the legal formula will permit, to place it and its revenues in judicious hands, in order that Mr. Muhr may be properly attended to in a pecuniary sense should his mental malady develop in a worse degree.

There is nothing new to chronicle in jewelry circles this month. The Saturday half-holiday and the early closing movement unite with dull business and stagnant trade to make news and gossip difficult to obtain. One thing, however, is certain: all the jewelers, wholesale and retail, look forward to a rushing fall business and they are getting ready for it. That's the way they talk in both the wholesale and retail lines.

The Atkinson Bros. are still running the Keystone watches, and despite warm weather report good business. Mr. Sheafer says he sees nothing to complain of, and fails to see a bugaboo in the Presidential year. David F. Conover declares that "although we are doing nothing now we are getting ready to reap riches in the fall;" and the Hagstozs are not behind in their belief in the golden prophecy. Mr. Hurlburt, of the new firm of H. O. Hurlburt & Sons, feels the confidence born of both novelty and experience combined, and the National Watch Case Company, the Booz & Humbert's corporation venture is a venture no longer, but an assured institution in the trade.

Among the retailers dullness prevails to a great extent. Bailev, Banks & Biddle and Caldwell & Co. are handicapped from a business standpoint by the absence of most of their customers from the city. Society is not in town in the summer time, neither does society buy gold and silver and precious stones in the dog days. Getting back to wholesalers, it might be well to say that Mr. Geo. Scherr does not anticipate trouble from the political excitement, and that Simons Bro. & Co. are making their usual preparations to send men on the road and canvass every State of the solid South as well as the great Northwest. Philadelphia jewelers in general propose to put forth their best endeavors this fall to build up business, and make things go regardless of any consideration as to who may be elected President. Gautschi Bros. guarantee to furnish the music for the successful man on Inauguration Day, and no one who has heard their famous music boxes will doubt their ability to do so.

The warm weather, the general exodus to sea shore resorts, and perhaps the fact that people are rendered undesirous of too keen sight in warm weather has had its natural effect upon the optical instrument trade. Mr. Fred. Mayer, of Chestnut street, says that people, as a rule, do not take advantage of the excellent glasses made now-a-days to look for the coming effect of either high tariff or free trade. Mr. Williams, of the Philadelphia Optical Company, declares that his foresight of brilliant business prospects is by no means all visionary, and Manager Bishop, of the National Optical Company's works, continues to run that establishment, with a fair promise of making a barrel of money in the near future for the proprietor, Mr. Fitzgerald.

Mr. M. Zineman, of M. Zineman & Bro., has just returned from Chicago, where the firm will establish a branch house ere the leaves begin to fall. Mr. Zineman goes daily to the sea shore, and has a cottage at Atlantic City which he has christened "Diamanta," and which is the rendezvous of all the eye-glass business men of the city. It is needless to state that Mr. Zineman treats his callers well, if they be in or out of the business.

NOTES BY THE WAY.

Mr. John Frest, who, until 15 years ago, kept a jewelry store at 906 North Second street, died July 6 at Atlantic City. He was known several years ago as an actor, and was successful on the stage as well as in business.

Mr. J. H. Davis, of this city, and Mr. Chas. E. Galt, of Washington, D. C., have formed a partnership for the manufacture of silver-

smith ware at 730 Sansom street, under the firm name of Davis & Galt.

The wholesale jewelers are all making campaign badges for both parties in fair quantities, and the retailers are doing a good business in disposing of them to ardent partisans.

S. M. and Samuel Fridenburg sail for Europe on the 21st inst. from New York on the steamer *Umbria*. The trip will combine both business and pleasure.

Mr. W. G. French, of the Seth Thomas Clock Company, of New York, is in this city spending a portion of his vacation. PENN.

The Jewelers' Security Alliance.

- President, DAVID C. DODD, JR.
First Vice-President, AUGUSTUS K. SLOAN.....Of Carter, Sloan & Co.
Second Vice-President, HENRY HAYES.....Of Wheeler, Parsons & Hayes.
Third Vice-President, DAVID UNTERMAYER.....Of Keller & Untermeyer.
Treasurer, W. C. KIMBALL.....Of Strange & Brother.
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- EXECUTIVE COMMITTEE.
J. B. BOWDEN, Chairman.....Of J. B. Bowden & Co.
C. G. ALFORD.....Of C. G. Alford & Co.
N. H. WHITE.....Of N. H. White.
CHAS. G. LEWIS.....Of Randel, Baremore & Billings.
F. KROEBER.....Of F. Kroeber Clock Co.
SILAS STUART.....Of Silas Stuart.

- EXAMINING FINANCE COMMITTEE.
EDWARD SMITH.....Of Smith, Knapp & Co.
A. JORALEMON.....Of A. Joralemon & Co.

For further information, Application Blanks for Membership, By-Laws, etc., Address P. O. Box 3277. 170 Broadway, New York.

At the regular monthly meeting of the Executive Committee, held at the Alliance office on the 16th inst., there were present Vice-President Hayes, J. B. Bowden, Chairman, Messrs. White, Kroeber, Lewis, Stuart and Secretary Hodenpyl.

The following were admitted to membership: Chas. A. Bannister, 105 Genesee street, Auburn, N. Y.; O. S. Clayton & Sons, 81 Fox street, Aurora, Ill.; Fred'k W. Drosten, 619 Olive street, St. Louis, Mo.; Kind, Abt & Co., N. W. cor. Madison and Franklin streets, Chicago, Ill.; Pepper & Horner, Veal street, Cleveland, Tenn.; Geo. B. Styles, 31 Wall street, Kingston, N. Y.; William M. Strohl, 90 Broad street, Bethlehem, Pa.; E. J. Wells, 155 Main street, New Hampton, Iowa; H. B. Swart, for. est, of A. F. Burbank, 301 Main street, Worcester, Mass.; E. D. Vosbury & Co., 153 Washington street, Binghamton, N. Y.; Chas. A. Tresfethen, 959 Elm street, Manchester, N. H.

On June 19, H. Angermann, 39 Genesee street, Buffalo, N. Y.

Religious Emblems Connected with Timepieces.



ABOUT FIFTY years ago, says Henriette Vernon, a Belgian peasant designed and constructed an elaborate wooden clock, which he named "The Moving Calendar." This peasant worked in the field by day, but at night he occupied himself with his invention in a corner of the garret in which he lived. The clock has several faces to mark the hours, minutes, seconds, days, years, even centuries; the day of the month, the month of the year, the setting and rising of the sun and moon. The works, which are made of wood and brass, can easily be seen, as they are enclosed in a glass case. About the dials is a gallery a yard long, with cells in the center and a tower at either end. Just before the striking of the clock, the door of one of the cells opens and Death walks out, carrying his scythe. He is followed by Christ, who, with whips drives Death

before him into another cell. As the clock strikes, a little rooster flaps his wings and stretches his neck as if he were crowing; and when the clock is through striking the two figures retire into their cells, closing the doors behind them. At 6 A. M., noon, and at 6 P. M., when the Angelus is heard, the Virgin Mary appears at her cell, enters the gallery and goes to an oratory, while from one of the towers an angel descends and bows reverently to her. The Virgin, deeply moved, trembles in her agitation. Then the angel returns to the tower and all is motionless as before.

An acquaintance owns a gilt metal watch in the form of a cross, which is over three hundred years old. From the nature of the design on it, it is supposed to have been made for some lady superior of a convent. The Holy Virgin and St. John stand at the foot of the cross and angels and cherubs hover round. On the back of the watch is the figure of Mary, holding the Child, while above her is an old man, probably meant for God Himself. Three other figures stand near her, and around the sides of the watch are engraved emblems of the Passion. The face of the watch is gilt, engraved with the figures of Mary and the Child, and the hours were marked on a circle of silver. Even the works show the religious tendency of the former owner of this watch, for they are arranged in the form of a cross.

In the South Kensington Museum is a gold enameled French watch of the seventeenth century. On the outer sides of the case the Holy Family on one side and the Virgin and Child on the other side, are represented, while the inner sides are ornamented with the portraits of Louis XIII. and of Cardinal Richelieu. This watch is two and one-quarter inches across, and was bought for the small sum of \$100.

There is a very curious clock in the Cathedral of St. John at Lyons. The minutes of the hour are marked on an oval plate, and are pointed out by a hand which at all times just reaches the circumference, for it contracts and lengthens itself as it makes its circuit. The days of the week are each symbolized by a figure, which stands in a niche on the morning of the day it represents, and is replaced at midnight by a figure personating the next day. On the top of the clock is a rooster which flaps its wings and crows three times. Underneath him is a gallery, upon which two doors open, opposite each other. From these doors issue the Virgin and the angel Gabriel. While the angel makes his obeisance to Mary, a third door opens and the Holy Ghost descends upon her head in the form of a dove. Then these figures disappear and give place to a reverend father, who raises his hand in benediction.

A most interesting watch is one which belonged to Mary, Queen of Scots. It is silver gilt, and is made in the form of a skull or death's head. Death, with his scythe and glass, stands on the forehead of the skull, between a cottage and a palace, his toes touching the doors of each to indicate his partiality. On the back of the skull Time is shown devouring all things. He also has with him his emblems—his scythe and the serpent with his tail in his mouth, indicating eternity. The upper part of the skull is divided into halves, on one of which is represented Adam and Eve in the Garden of Paradise, and on the other the Crucifixion. On either side of Christ are the two thieves, and below Him are the two Marys. Just below these compartments is an open work, about an inch wide, to allow the sound to be heard when the watch strikes. In it are shown emblems of the Passion and Crucifixion—the cross, pincers, sponge, spears, hammer, nails, thorn and thongs with which He was tortured. By placing the upper part of the skull in the hand and raising the jaw, the interior of the watch may be seen. Here is shown the Holy Family in the stable at Bethlehem. The Child Jesus lies in the manger, attended by angels, and from above an angel is seen descending with a scroll in his hand, bearing the inscription in Latin: "Glory to God in the highest; peace on earth, good will to men." In the background are seen the shepherds, watching their flocks. The dial plate is of richly engraved silver, surrounded by gold, and lies where the roof of the mouth would be

in a human being. The hours are struck upon a silver bell within the skull, which contains the work when the jaw is closed.

Clocks and watches, portraying scenes from the life of the Virgin and of Christ, were very common during the Middle Ages, and there is scarcely a town in Europe of any importance but what has a time-piece of this kind to show.



A Lady's Rambles Among the Jewelers.

THE past month was not a favorable one for the gleaning of news items in fashions in jewelry. While many new designs are out in the various articles that pertain to personal adornment, these have been for the main part modifications or variations of old ideas. Several facts of general interest, have, however, been made apparent during my recent visits among our manufacturers and dealers. One is that pearls have never been more popular than at the present date, nor have these commanded such high prices as during the past few years. The demand has increased not only for white pearls but for black pearls, gray pearls and pink pearls. In this connection, I may as well state, what I have the highest authority for believing, namely, that many of the fancy colored pearls in the market have received their variety of color, not from nature, but by artificial means.

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RUBIES are rarer and consequently higher in price than ten years ago, hence the possessors of fine rubies may congratulate themselves, not only upon being the owners of decidedly decorative gems, but a first-class investment, so far as money expended is concerned.

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DIAMONDS were never more worn than at the present time, nor have they ever, in this country, been employed in greater prodigality in decoration of popular grades of gold and silver jewelry. Diamonds off color and diamonds of insignificant size, play a prominent part in brooches, bracelets and rings for that great and profitable class of patrons known as the "popular trade."

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FINE diamonds of considerable size, are reserved for setting as solitaires, or in association with other precious stones.

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THE opal, ever since Queen Victoria turned the social tide in its favor in England, by patronizing it herself, has steadily gained recognition here, until now, a truly fine opal has become, with most people, a desirable gem, and little or no allusion is made to the old superstitions that were formerly associated with it.

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THERE is some talk to the effect that the topaz, which of late years has failed to find general favor, will again be revived in the world of fashion. The popularity of amber is on the increase, its use having been employed of late in form of beads. There remains a demand for the true chrysoberyl cat's eyes, but these are not to be

confused with a chatoyant variety of feldspar sometimes called cat's eye, any more than the Mexican opals should be confounded with the finest of Hungarian stones.

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THE "fancy stones," especially the hard ones showing desirable and rich colors, retain their popularity and afford decorative articles at prices reasonable compared with those asked for true gems.

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THE brooch and pendant, often the two articles in one, furnish a favorite and exceedingly fashionable ornament in which to show off fine gems, especially those of considerable size.

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THE enamel flower pins have proven again to be excellent summer jewelry, and have sold as well this season as last, according to our up town dealers' reports.

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SO LONG as the chatelaine continues to please, watches in silver cases will remain in fashion. These silver watches are made with chatelaine attachments, and are for the most part decorative in appearance, being exposed to view. There are no set rules that govern this decoration. The designers aim either at something exceedingly pleasing, or odd, or both in effect. The designs are sometimes etched, occasionally engraved, and often enameled. As a general thing these watches are small in size, and many of them show open faces with decorated dials.

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SOLID silver frames for cabinet photographs have not yet ceased to charm by their novelty, and now come sterling silver miniature cases and lockets in unique designs. The miniature cases have open faces and are for the most part oval in form, though there are some square ones that simulate regular picture frames. These cases are quite large in size, although designed to be worn on a chatelaine, where are collected veritable curiosities nowadays. The backs of the cases are, as a rule, slightly rounding and elaborately wrought in *repoussé* work. Some of these copy the designs on old time affairs while others are modern in pattern. One seen was in arabesque pattern in vari-colored enamel.

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THE mention of these miniature cases leads to a notice again of the chatelaine and girdle, both of which have acquired a wide-spread popularity. From the former are suspended a large and intrusting collection of articles, big and little, such as miniature cases, vinaigrettes, pencils, whistles, tablets, pin cushions, tiny scissors, watches and other useful articles, along with any number of odds and ends purely decorative or curious in effect.

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LOCKETS, which have for a long time been struggling to gain public recognition once more, are now to the front and are worn by both sexes, ladies finding a place for them sometimes as a charm on the Queen chain, and sometimes on the chatelaine.

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THERE is an infinite variety of patterns shown in lockets. There

are all-gold ones, all-silver ones, enameled ones and gem-set ones. No special form is recognized as the only true one for the locket, though oblong and round shapes prevail. There are quite pretty little affairs shaped like a shell, an almond and a book.

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FOR men's wear come seal-set lockets that, swinging from a watch chain, present the appearance of an ordinary seal set in a framework of gold. Then there are lockets made of silver coin pocket pieces, which are carried in the pocket the same as were the coins previous to their transportation into a receptacle for a painted miniature, or photograph or lock of hair. The coins used for these coin lockets are mostly foreign ones, and in some cases valuable antiques.

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WRITING of coins, recalls the fact that both gold and silver coins are being employed to a limited extent as cuff buttons and garter clasps, a style that has nothing in particular to recommend it, as have the coin lockets described. These last named furnish what most men are fond of jingling about in their pockets, with the addition of a souvenir of ones *fiancée*, wife or child, concealed from the observation of others.

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OF THE making of charms for watch chains and bangles there seems to be no end. Pencil charms continue popular, and among new devices noted in this direction are a gold cane with a gem for a head; a lucifer match of gold with one end enameled in imitation of brimstone; a champagne bottle; a stick of sealing wax and a cigarette. Pencil charms are also made for Queen chains, and among these appear some ingenious designs that appeal especially to ladies, such as a parasol closed, or a fan, a telescope, or a Japanese doll.

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GIRDLES and belts divide favor, there being fair sales of both articles. Indeed it may be stated that most ladies with whom expense is no object, are the happy possessors of both. With the warm weather have appeared a variety of patterns in open work belts of silver. A pretty belt seen, had for its buckle an octopus in oxidized silver, that held in its tentacles large fancy stones. Another attractive belt clasp seen, represented in open work silver a rustic frame in the center of which was set the wearer's monogram traced with a delicate vine of silver. Other belts show trimmings and buckles of silver and gold wrought in Russian patterns, and there are a few samples of Bulgarian silver work to be seen in girdles.

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CONSPICUOUS among popular novelties now lying in the jewelers' show cases, is the jewelry that has borrowed its patterns from seasonable objects, objects suggestive of athletic sports, yachting, and the campaign. Dumb-bells crossed or chained together, have been reproduced in both gold and silver, to serve as cuff buttons; row boats, yachts, oars, anchors and pulley blocks, furnish designs for scarf pins, so do jockey caps, whips, horseshoes, horses' heads, foxes' heads, etc., etc.

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AMONG articles combining novelty with utility, and illustrating their seasonable jewelry, is a gold rope watch chain with small pulleys at either end and which are worked by a pencil charm. By pulling the charm the chain slides readily through the pulley blocks and allows as free use of the pencil as if it were quite detached

from the chain, an arrangement that can hardly fail to be appreciated. This chain has been appropriately christened "The Admiral."

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ANOTHER chain likely to find favor among yachtmen, is composed of gold rope running through a pulley block from which hangs suspended, as a charm, an anchor or a capstan with a compass, as the wearer chances to prefer.

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THE jockey cap in a variety of colors represented by enamel, and with gold peaks, is being affected not only for scarf pins but cuff buttons. Little whips with the braided lash wound around a gem-set handle, are to be seen in silver as well as gold, and make novel lace pins.

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THE variety of fancy jeweled horseshoes is legion. A pleasing brooch is a horseshoe formed of a double row of pearls and diamonds, the former being larger in size than the latter. A pretty brooch represents a gold horseshoe studded with square nails of sapphires or garnets.

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SCARF pins are out that simulate horses' heads in small diamonds; there is also a fancy for fox head pins.

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POCKET knives with silver handles are also variously decorated with a horseshoe, a jockey cap, or a base-ball club.

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MENTIONED with the so-called election pins is the ballot box campaign scarf pin, the top of which is finished with a miniature ballot box on which is inscribed the name of the favorite candidate. Then there are numerous suggestive designs such as a new broom, a victorious looking rooster just ready to crow, and tiny flags of dull gold with the words "No Free Trade" or "Free Trade," as the case chances to be.

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AMONG the most successful of seasonable novelties introduced by English jewelers, are the "1888" brooches and bracelets, made either of gold or silver wire twisted so as to form the figures "1888." Generally speaking this 1888 jewelry is represented in the cheaper classes of goods, although not here confined, there being both brooches and bracelets wrought in the same figures, with diamonds set in the center of each.

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WHILE on the subject of imported novelties, it may be well to speak of the present tendency in England towards an imitation of old Scotch jewelry. The recent national exhibition at Glasgow, gave to those jewelers who were fortunate enough to see the Stuart and Jacobite relics there shown, an admirable opportunity for gaining curious and to them new designs in various ornaments. A notable example was a "Queen Mary" rococo necklace from a design by Holbein, the gold, enamel, stones and pearls all being Scotch. Two or three curious old watches belonging to this same heroine of history were also there; one in rock crystal being considered especially novel.

The Jacobite collection affords some desirable designs in finger rings, drinking cups, candlesticks, etc.

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SCOTCH jewelry is always represented to a limited extent in this country. Every jeweler keeps a few shawl pins and brooches ornamented with Scotch pebbles if nothing more. For chatelaines are to be seen now tiny silver dirks set with Scotch stones, small stilettos and other imitations of ancient weapons used by the Scottish clans.

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THE wearing of miniature portraits, especially beautiful faces taken from the paintings of Old Masters, continues not only in brooches but in bracelets. These, as a rule, are encircled with diamonds or pearls, though occasionally they are placed in a framework of gold or silver.

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OUT of the above has, perhaps, grown the present fancy for a portrait in miniature reproduced on the inside of watch cases, that prevails to a certain extent among the popular trade.

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THE fashion of watch-bracelets and watch dials set in one corner of a card case or pocket book, which originated in London, and has been recognized in Paris, has found its way here. Whether this fashion becomes popular or not remains to be seen. It possesses the merit of being novel if nothing more.

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IT is fast becoming an open question as to whether more extravagance is shown in ladies' garters with their gold and silver clasps, or in men's suspenders with their heavy gold and silver buckles. These articles certainly make a remarkable exhibition in the show cases, and are said to be popular presents among members of families and others sufficiently familiar to exchange such practical articles of apparel.

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SHOE buckles and shoe tie fasteners or clasps have gained a number of new designs and will prove to be welcome objects, for at least so long as the season for low shoes lasts.

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FOR the "house beautiful" our silversmiths have contributed many articles that can hardly fail to prove "joys forever." There are jewel caskets, and flower baskets, bon bon receptacles, water pitchers and vases, that are worthy of individual and elaborate description. Among the former are ingenious and faithful copies in silver, of braided basket work; then there are beautiful cameo boxes and vases mounted on silver stands, in rustic pattern. For long stemmed flowers are rock crystal and Bohemian glass vases, in long cylinder shapes, set in a ground work of silver leaves.

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FILIGREE enameled silver is made into trays for the toilet table, card receivers, and tete-a-tete sets for tea and coffee. Dull finished silver is plaited like wicker basket work for flasks and cake baskets. On the bottom of the latter appears spread a snowy napkin like

damask. There is a fancy too for tea trays that appears to be covered with a napkin with colored border, done in enamels.

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AGATE and onyx figure in both vases and pitchers, set in a frame work of dull silver.

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DRESDEN and Sevres wares are decidedly fashionable for boudoir and drawing rooms that are furnished in the prevailing French styles; clocks and candlesticks being favorite objects.

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For bed rooms are provided low candlesticks in choice wares and in colors to suit the decorations of the chambers. Candlesticks of the same form are also furnished in silver.

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BISCUIT boxes, with and without silver trimmings, are popular in English wares. An entirely new pattern in silver biscuit boxes, by the way, is the double opening box with pierced partitions.

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CUT glass continues its popularity and is often selected for pot-pourri jars and rose bowls—at present desirable articles. It is also largely employed for finger bowls, dishes for celery, etc. An attractive style of glass is that which is cut in long curved and fluted lines and in the intricate Russian cutting, that catches the light at every point.

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COLOGNE bottles for the dressing table come sometimes in square and sometimes in globe shape, and many have glass stopples, or stopples of *repoussé* silver.

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A NOVELTY for the table is an scalloped butter shell with a glass lining.

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A NEW crumb scoop has an ivory handle with an engraved silver blade.

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A DOUBLE berry dish of cut glass divided in the center by a silver braided handle and setting in a frame of braided silver wire, is a seasonable attraction.

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CUT glass salad bowls with silver mounts divide favor with choice porcelain ones similarly finished.

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MATCH boxes and cigar cases are decorated with enameled or etched designs of hunting horses, yachts and yacht club flags, the colored flags being admirably presented in colored enameling. A cigar case seen recently, had on its cover in *repoussé* the head of a well-known trotter. A silver match box observed at the same time, was mounted with two dials having movable pointers. This novelty,

it is thought, will not fail to become popular with base-ball players, who will find it an assistance in score keeping in addition to its original usefulness.

ELSIE BEE.



[FROM OUR SPECIAL CORRESPONDENT.]

BOSTON, July 16, 1888.

People hereabouts are not expending a great deal of money in the jewelry line now-a-days. Its too near vacation time. The transient customers are mostly out of town, and, as one gentleman expressed it, "when they get back from the mountains and sea shore they wont have more than enough to pay their car fares." There's an immense amount of philosophy in that remark, but not half so much as in the action of many of the smaller dealers, who have made a virtue of necessity by practically shutting up shop and going away for a few weeks themselves. The wholesalers, too, are a trifle despondent, but, bless you, they can certainly live awhile on the memory of an only recently past prosperity.

There is a vast difference to be noted in the activity manifested in the various lines of trade. The larger retailers, for example, will carry larger stocks, and a bewildering variety of expressive novelties are even now doing a good business, while those who deal only in the staple and more limited lines are heavily affected by the summer exodus. The former reckon their customers very largely among the wealthier residents—those of Beacon street and the Back Bay, and while apparently so rushed, judging from daily outward appearances, they yet more than make up by the far greater values which their numerically fewer sales represent.

No better instance of this feature of the local trade comes to mind than the sale, a few days since, of an elaborate pearl necklace by Palmer, Bachelder & Co. Of course, they don't give the figures, but my word for it, that one entry more than offset the sales of some other concerns during that entire week. Such transactions are wonderful eveners-up in the long run.

It may be old news in other localities, but it is yet a fact worth noting, that solid silverware is fast crowding the plated variety to the wall, so far, at least, as the Boston market and those immediately and dependent upon it are concerned. When the solid ware was made exclusively by hand, and was, consequently, many times as expensive, it did not compete dangerously with plate for public favor. Of late, however, it has grown exceedingly popular, which fact has resulted in the application of machinery to its manufacture. Low prices, of course, have followed, until now the general purchaser has discovered that it is but a trifle, if any, more expensive than plated ware.

I saw some novelties that I, in my ignorance, couldn't see any use for. They had instead of a fork or spoon, simply a screw-shaped point, of which I could not guess the purpose. But I was told they were "butter picks." I doubt if the non-professional reader would know any more after hearing that than he did before.

The Jewelry Club will, some time in August (the date is not yet fixed), go on their first harbor trip. They will probably go to Tafts' at Point Shirley. Several jobbers outside of Boston have joined the club, it being the intention of the men who started the club to have it include all the jobbers of New England.

Mr. Kennard, of Bigelow, Kennard & Co., has been in Europe for nearly three months, and will return about the first of the month with his European selections.

The crowding that is taking place all the time in the center of the

city has led to a number of changes in location of old firms. The center of the city, if the valuation of real estate is any indication, is at the corner of Washington and Winter streets, and it is a curious fact that land is valued over \$30 a foot higher on that side of Washington street than on the other side. A. Stowell & Co., who have been at their present place on Winter street for more than a quarter of a century, are to move to the head of Temple Place, on the corner of Tremont street. Mr. Stowell has leased the land now occupied by N. D. Whitney & Co., and Savage, King & Co., and will soon prepare plans for a new building to be erected there. This will be six stories high, fronting 60 feet on Tremont street and 90 feet on Temple Place. Stowell & Co. will occupy the first and part of the second floors; and it is expected that the building will be ready for its occupants in time for the Christmas trade of '89. LEON.

Manufacturing Industries and Politics.

WHILE it is no part of the functions of a trade paper to discuss the personalities of politics, or to express a preference for parties or candidates, it is, however, entirely within its province to point out any issues that may be raised in politics that are calculated to affect the welfare of the workingmen of the country. In the present political campaign, the main issue raised is between those who are desirous of securing a reduced tariff, and those who wish to maintain the tariff as a means of protecting the labor, wages and social position of our own workmen. The two great political parties of the country have held their conventions, adopted their platforms of principles, and nominated their candidates. The issue of tariff reduction or protection is to be the chief feature of the campaign; the Democratic party standing as the representative of lower import duties, and the Republican party as that of protection to American industry. Upon this question parties are divided, individual voters being for low tariff or protection according as their personal interests are affected by one or the other. Some manufacturers in the jewelry trade would favor throwing open our ports to the free importation of the goods in which they deal principally, or, at least, for the free importation of the raw material that enters into the products of their manufacture, while others can see nothing but ruin staring their industry in the face if foreign made goods, the products of European cheap labor, are permitted to enter this country free in competition with those of their manufacture. The Protectionists maintain that lower duties would tend to reduce the wages of the workmen of this country, and degrade them to the low social level that characterizes their fellow workmen of the old world. The party journals are already deep in the discussion of this momentous question, and the workmen interested, whose votes are sought by each of the opposing parties, should take pains to instruct themselves upon the true merits of an issue so vital to their welfare, present and to come.

It will be noted that the press of England and Canada manifest a special desire for the success of the Democratic party. The writer of this article received a communication from a Canadian gentleman a few days since in which he said that the manufacturers of Canada desired to see the Democratic party successful, for the reason that labor was cheaper there than here, and if the duties were removed, they could undersell the manufacturers of this country on our own soil. England is essentially a free trade country; what the workmen think of that system is indicated by the fact, as stated in one of our exchanges, that "a petition was recently presented to the British House of Commons, signed by 15,000 workmen of Sheffield, urging that moderate protective duties should be imposed on all foreign produce that is driving laborers and mechanics of all kinds out of employment, land out of cultivation, and forcing capital to go to foreign countries for investment." Sheffield is the heart of the cutlery manufacture, and enjoys such advantages for obtaining raw

material that it was supposed that no one could compete with their manufacturers in the production of goods of this kind. Yet the productions of America and Germany are found throughout Europe, and even upon the shelves of the shop keepers of Sheffield itself these foreign made goods are found, competing in quality and price with their home products. Hence the Sheffield workmen are asking the Government to place such duties on these goods as will protect home manufacturers. If the tables were turned, and Sheffield cutlery admitted here free of duty, how would it effect the workmen engaged in that line of industry? The same inquiry is the one the American workmen are required to consider from the standpoint of the industry in which they are engaged.

The Trader, a Canadian journal devoted largely to the jewelry interests, discussing the presidential issues of this country says:

"The question that the workingmen of the United States have to face in this election, is of the utmost importance to them. It is more than mere sustenance, *it is their bread and butter*. Every intelligent person who has travelled in Great Britain and Europe, must acknowledge that the condition of the masses in this country is infinitely better than it is on the other side of the Atlantic. That it is so, is in a great measure owing to its Protective policy, and the question of the hour over there is, shall we come down to the level of the European mechanic or remain as we are. The forthcoming struggle in the United States is a momentous one for the future of this continent, for we cannot blind ourselves to the fact that on its result the future trade policy of Canada largely depends."

Between now and the election in November, American workmen will have an abundant opportunity to inform themselves as to the great issue raised between the political parties, and to decide for themselves how its determination one way or the other, by the election of this or that candidate, will effect themselves personally and the industry in which they are engaged and upon which they are dependent for livelihood. The manufacturers will necessarily be drawn into the discussion, and probably into an active participation in the campaign, and each will be guided in his action by his personal interests, regardless of party affiliations or political predilections.

Historical Notices.

ON THE TRIALS MADE AND THE RESULTS OBTAINED DURING THE PAST FIFTY YEARS, FOR THE PURPOSE OF RENDERING THE CHRONOMETER INSENSIBLE TO MAGNETIC INFLUENCES.

[From the *Revue Chronométrique*.]



IT IS GENERALLY believed that the progress made in the domain of industry, by the application of electricity to the manifold purposes of human life, necessarily caused experiments to be instituted for rendering watches insensible to magnetism. The following researches will show that this opinion is erroneous, because for a long time prior to this event, watchmakers of talent have found means of overcoming this influence, and employed metals not subject to magnetism in the construction of

the balance and its spring for marine chronometers.

As early as 1833, Messrs. Arnold and Dent published in the *Nautical Magazine* the result of their experiments instituted with six chronometers which had been subjected to magnetic influence. Two of these chronometers were furnished with balances of platinum, silver and brass, with gold balance springs; these parts were of steel

in two others, and, finally, the last two were partially protected against this influence—one, by having a steel spring and balance of platinum and silver, the other had a gold spring and steel balance.

These experiments were conclusive and demonstrated in a striking manner that platinum, gold, *palladium* (which will be enlarged upon further on) and even glass might be employed in the manufacture of balance springs and compensated balances.

It is also interesting to read of the experiments made about the same time with chronometers provided with ordinary balances, but balance springs of different natures.

From 0° to 30° Reaumur (32° to 68° F.), a chronometer with a glass spring retarded 40 seconds in 24 hours, while one with a *palladium* spring retarded 2 minutes 30 seconds in the same time. Finally, two chronometers, one with a steel spring the other with a gold spring, retarded, the first, 6 minutes, 25 seconds, and the second, 8 minutes, 4 seconds, in the same time.

Although magnetization may be of no influence in these variations, we mention them to simply show that *palladium* has for a length of time been employed in chronometers.

John Gottlieb Ulrich had at so early a date as 1828 taken out a patent, No. 3,639, in London, looking to the solution of the same question. Somewhat later, in 1837, he took out a second, No. 7,350, for an improvement, and finally a last patent, No. 103, was granted to him in 1856, which is highly important to us in the solution of the present question.

From it will be learned that a part of his invention consists of an improvement in the balance of ordinary construction, in such a manner that it compensates from 0° to 130° (32° to 34° F.), and that its tendency of being affected either by terrestrial magnetism or by local attractions, and in particular those produced on board of iron vessels, is entirely overcome.

Farther on is mentioned an improvement to the balance, consisting in the employment, in preference to steel, of portions of arcs of a circle of two united metals, silver or brass, aluminum or *palladium*, or any other metal lighter than platinum, provided that it be not subject to magnetism.

In the first quarter of the 19th century, a Swiss watchmaker of great ability issued a memoir entitled, "Essay on the Isochronism of Balance Springs and Other Notes." The author of this memoir, Mr. Frederic Houriet, of Locle, after having described the different experiments by him instituted for the purpose of rendering the balance spring isochronous, closes his researches by giving the detailed description, accompanied by figures, of a chronometer called "garde-temps" (timekeeper), invented and instructed by him. Except the balance spring and the pivots of the mobile parts, all the pieces of this instrument were of brass, gold or platinum, the balance compensated with bi-metallic rim of platinum and gold. Balance spring of gold. The experiments for testing the rate of this timepiece, placed in contact with a strong magnet, proved that every magnetic influence was completely destroyed, because the rate had not whatever been affected by the operation of this influence.

The researches, experiments and trials of above-named artists were principally directed to marine chronometers, because the probable magnetic influence upon watches was at that time little understood by both manufacturers and consumers. The principal endeavor was directed toward protecting the balance spring of watches against oxidation.

In 1876 we find in the *Journal Suisse d'Horlogerie* that the matter of magnetism in watches began to claim a large part of attention, and although oxidation still engaged a principal part of attention, we read in the *Horological Journal* of London, of 1879, several articles praising the qualities of an alloy of *palladium* for the balance spring.

From this results evidently that the experiments and works of Houriet, Arnold, Dent, Ulrich, etc., were first of all directed toward finding means for protecting chronometers against magnetic influences; therefore, the alloys of platinum, gold, silver and *palladium* which had been employed for this end, are made use of for more

than fifty years, and it certainly sounds strange if any one tries to claim the employment of these metals as a new invention.* The actual truth is that *palladium* springs have for a number of years past been before the public; various manufacturers have made and sold large quantities, and many firms in Geneva have been engaged in making them a long time before the issuance of the present letters patent. Beside this, according to the official reports, there were balance springs made from an alloy of *palladium* exhibited at the French Exposition of 1878.

In conclusion, we wish to say a few words on balances and springs of steel, which have rendered and are still rendering us excellent services.

The methods employed for decrying them are not always models of exactitude and truth. For instance, it is said in the advertisement vaunting the great merits of balances and springs from the *palladium* that the neighborhood of a small magnet, no matter in what form, whether the receiver or transmitter of a telephone, or the knife which you carry in the same pocket with your watch, are just so many causes fatal to the reliable rate of your watch. If one were to believe the details of this advertisement, then no watchmaker could make use of steel tweezers to handle the balance spring and the various pieces of steel of the escapement without injury to the precise rate of the watch—the very steels in the corsets of our ladies would be causes detrimental to the rate of their watches. What would our illustrious predecessors, the Arnolds, the Dents, the Frodshams, the Berthouds, etc. (without at present taking into account the timers of our day, who, for the last few years have obtained such excellent results with steel balances and springs), if they were told of such enormities?

The truth is, that of all the metals known at present steel is by far the most useful, because it can be used for all kinds of delicate and fine work. On account of the physical properties it possesses, and notably those of temper and elasticity, it justly occupies a place in the industrial arts which can never be aspired to by any of its competitors.

Especially in the horological industry, vain would be the attempt to replace it without great injury to the strength and perfection of the small and delicate machines called watches.

It is undeniably true that the causes of magnetism have within the last few years assumed large proportions, and it is but proper that attempts to combat them should be made, but by pushing too far the precautions taken to avoid one evil, another far more dangerous and especially more onerous to the consumer is invited.

... Let us, for instance, call to mind the work performed per second by certain parts of an anchor watch.

The balance of an anchor watch generally receives 18,000 impulses per hour; the two horns of the fork each impart it 9,000 small blows; this makes for 24 hours the respectable sum of 216,000, or 78,840,000 impulsions per year.

It is well known that a drop of water in falling will wear a hole in the hardest rock; how easily, therefore, would be worn away the sides of the fork notch if constructed of another less hard metal than steel. To say that the future belongs to the non-magnetic watch is making an enormous assertion, requiring more than the ardent imagination of the advertisers to substantiate.

POLISHING BROACHES.—These are usually made of ivory, and used with diamond dust, loose, instead of having been driven in. Oil the broach slightly, dip it into the finest diamond dust and work it into the jewel the same as you would the brass broach. Unfortunately, too many watchmakers fail to attach sufficient importance to the polishing broach. The sluggish motion of watches nowadays is oftener attributable to rough jewels than to any other cause.

* For a number of years the section on horology of the Society of Arts of Geneva has been engaged with the solution of this question, as well as the employment of *palladium* springs.

Campaign Badges.



THE JEWELRY manufacturers of Attleboro, as well as those of Providence, are rushing business on the campaign line of novelties, and no less than a dozen of the largest concerns in the northwest corner of Bristol county, employing hundreds of hands, are turning out tons daily of campaign badges and pins. At present there are nearly one hundred different designs, all of which are being manufactured and shipped West, where they are literally flooding the country. The western market is a gold mine for the eastern manufacturers, and men, women and children in that section, even in the remotest towns and villages, are purchasers of this product. Said one of the manufacturers recently: "Say what you will, this sea is the greatest of all and if there are any dollars to be made Attleboro and Providence are going to reap their shares. Some men have the heart to say that because this is a presidential year business will be flat. Had this been said a few years ago it would have been true, but we have outgrown that, and to sum it all up the change in the administration does not necessarily stop business or in any way injure the commerce of this nation. Experience is a great teacher, and by experiences the manufacturers have been taught a grand lesson, and now they go into business with energy, without regard whether the Democrats or Republicans are coming out victorious in the fall. Both armies combined are our patrons, and with this fact, we have as a rule put the power to the wheel, turned out our goods, packed the grips of our salesman, set them adrift in all parts of the country, and with their return orders the enlivening scenes about the factories, the busy hum of the machinery is enough evidence to show that national elections have naught to do with our line of business."

Four years ago the manufacture of campaign novelties was a new branch of the jewelry industry to many and but a few entered into the trade. Those who did made money, and it is said one firm in Attleboro, in addition to other lines, cleared about \$50,000 on campaign goods. This year the same firm has gone into the trade extensively, and before the season closes expects to double that amount. The demand for these trinkets is enormous, and all lines of this branch, including buttons for the lapel, pins, brooches, hairpins for the ladies' badges of all kinds and charms, are selling to large and well paying markets in the west, principally in Indiana, Missouri, Kansas and Nebraska, while the states of the great northwest have joined the ranks and sent in orders for tons. Ohio is another state that gives the drummer ample scope to exhibit his goods, and car loads are shipped to all parts of that state. These goods will be made for weeks to come, and it is estimated that the product will number half a million gross, which gives an enormous profit to the manufacturer, the jobber, and the retailer, and yet cost the last buyer but a few pennies. The prices range from 50 cents to \$25 per gross. Just as soon as the announcement of the candidates were made, the already started work was finished with rapidity, and less than six hours after Harrison's nomination was learned, pounds of badges had been finished and were on the road for the west. All candidates are favored with excellent designs of various shapes, sizes, and from the cheapest to the highest quality of stock. The plain pins with the names of Harrison and also Cleveland across the front in gold letters, with a background of colored enamel, is one of the favored trinkets. Another is in the style of a G. A. R. badge, containing miniature photographs of the candidates, in the center of the five pointed star, which is suspended from a golden eagle by a red, white and blue ribbon. The small lapel button about the size of a five cent piece bearing raised letters "Protection," a small mill and 1888; "H. and M." on a four leaf clover, with an engraved log cabin; "C. and T.;" "Free Trade," "High" and "Low Tariff," and hundreds of other styles. These novelties are struck up by foot and power drops, from long thin sheets of stock, and tens of thousands drop into the pan every day. The backs are then sol-

dered to the fronts, others are pinned, and before they go to the carder each and every piece passes along the bench through a dozen or more hands. From the bench the carders receive the goods, and here are employed a small army of girls and boys who place the pins and buttons upon cards, packing and getting the goods ready for shipment. Messrs. Blake, Claflin & Co., Tappan, Berry & Co., Watson, Newell & Co., T. I. Smith & Co., F. G. Whiting & Co. are among the leaders in this branch of the industry. Help at this time is scarce and every person looking for work is put on the bench with this line. All the jewelers speak in unison: "Show your colors and and help the campaign industry."—*Providence Journal*.



[FROM OUR SPECIAL CORRESPONDENT.]

In visiting the different cities throughout New York State and the East, I was surprised at the number of inquiries for the travelers, as they all seem to have deserted the road, and the retailer feels so lonely and so uncomfortable over this treatment, that he finds himself wishing the month of July over and the travelers crowding his store again with new goods and new stories, as well as the latest news of the presidential campaign. Eleven months of the year the jobber or retailer has it all his own way, but the month of July, which is the travelers' holiday, he is only to be found amongst the wealthier class of people who only know how to enjoy life. While on their vacations these travelers go everywhere, think of schemes to outsell some other drummer or surpass his record, and the struggles in that direction are frequent and often interesting.

Just stop and think what are the requisites of a first-class traveler of to-day. He not only has to have first-class judgment, be a reader of human nature, a good memory, know how to tell a good story, but beside all these, be an active, hard-working fellow. How does this compare with the traveler of 20 years ago? His requirements in those days were his honesty and his capacity to wrestle with intemperance. It makes me sad, not on account of this great improvement in the morals of the travelers of to-day, but the thoughts of where will this all end. You think over the retailers and jobbers doing business to-day, and you will agree with me that 90 per cent. of them are men who early in life worked at the bench and began in a small way, and by strict attention to business they have accumulated a nice little stock and are doing a good business. The next move is a trip to Europe to buy goods and get a standing in the mercantile world as a European buyer. That is all very nice, too, but they shouldn't expect that these travelers are sent around the country to have broken French and German fired at them every time they enter their stores to sell goods. I am of the impression that the traveler of 1900 will not only have to be honest as well as an advocate of temperance, but also speak the French and German language, and the Italian language must be added in the year 1910, unless the government interferes in behalf of the traveler and legislates the Italians out of the country, the same as it favored the workman by barring out the Chinaman.

I see by the press that at a gathering of travelers at Ogdensburg the other day, resolutions were adopted endorsing Harrison and Morton. I was pleased to see it, as there is some hope now that a traveler may at some future day get an appointment abroad as minister, and get a trip to some foreign shore which he would otherwise never have reached. But to get down to business. I will ask, where is the dull summer season that all the jewelers looked for the early

part of this year, saying that an election year is always a bad one?

In Boston the other day, the members of the firm of the largest retail houses in the city said they were doing a good business, and seemed to be well pleased with their June and July business so far. Through the State of New York business is fair, and, I believe, much better than the retailers expected or dared to expect in this election year. What is the cause of all this? Can it be the Chicago nominations or can it be the St. Louis platform? Of the latter I have my doubts. As regards the former, it certainly looks that way, especially in the jewelry trade, both in Massachusetts and New York. That mugwump element of the East has entirely disappeared, and the followers of both the Hon. Roscoe Conkling and Henry Ward Beecher are again arm in arm with the rank and file of the Republican party, for the election of the Republican nominees and for the protection of American industries.

At Buffalo, trade there is fair. Mrs. Dickinson, of T. & E. Dickinson, reports a good July trade. Mr. Alfred Dickinson's baby boy has been seriously ill with pneumonia for several weeks past, but is now improving slowly.

Mr. Lee, of Edwards & Lee, reports a fair July trade.

The estate of Mr. E. B. Booth, of Rochester, who died last month, is to be settled shortly, and his son and partner will continue the business.

Mr. Wm. Miller, of E. S. Eltenheimer, is East on his vacation.

Mr. Humburch, of McAllaster & Humburch, of Rochester, N. Y., has just returned from several weeks' trip through Canada and the West.

Mr. E. B. McClelland, the art jeweler of Syracuse, has opened a branch store at Cazenovia Lake for the months of July and August, it being quite a popular summer resort for New Yorkers, and speaks rather encouragingly of this, his new departure.

Mr. Hoffman, of Marsh & Hoffman, of Albany, is abroad in search of novelties for the fall trade.

Mr. Jas. W. Cusack, of Troy, who has been ill for some time, is able to attend to business again.

Mr. F. W. Simms, of F. W. Simms & Co., is West on a pleasure trip.

Mr. Bouteceau, of Rappaport & Bouteceau, of Troy, has again opened their branch store at Round Lake for the season.

HARD SOLDER



[THE CIRCULAR is not responsible for the opinions or statements of contributors, but is willing to accord space to all who desire to write on subjects of interest to the jewelry trade. All communications must be accompanied by a responsible name as a guarantee of good faith. No attention will be paid to anonymous letters. Correspondence solicited.]

WHO CAN GIVE THE INFORMATION?

To the Editor of the Jewelers' Circular:

I have in my possession a gold open faced "French bull's eye" watch, made by Julius Le Roy, of Paris, bearing the number 2,949. I am very anxious to find out if possible what year it was made in, and F. D. Johnson & Son, jewelers, of this city, suggested to me that you might be able to give me some idea as to how I can obtain the

desired information. Any information that you will be able to give me will be appreciated.

Very respectfully,

Lynchburg, Va., July 11, 1888.

R. S. JONES.

WHAT SUBSCRIBERS THINK OF THE JEWELERS' CIRCULAR.

Mr. Wm. M. Sheldon, Adrian, Mich., writes: "I can't do business without THE CIRCULAR."

Mr. A. G. Crabbe, Layton Station, Pa., writes: "I am very much pleased with THE CIRCULAR."

To the Editor of the Jewelers' Circular:

At last business begins to improve again, and I am going to subscribe for my favorite journal, THE CIRCULAR, again. Please send me all of the back numbers of the present volume. Is it possible for me to get back numbers from September, 1886? If so, let me know and I will forward the "denaire." What has become of the "Horological Club" and our old friend, "Excelsior?" I have THE CIRCULAR from Vol. VII. to No. 8, Vol. XVII. (nearly ten Vols).

Very respectfully yours,

H. R. R.

Texas, July 14.

To the Editor of the Jewelers' Circular:

Through fault in binding, eight pages are missing from my July CIRCULAR. I should be glad if you will send me a perfect copy.

Yours truly,

JAS. DANGERFIELD.

Springfield, Mass., July 13, 1888.

To the Editor of the Jewelers' Circular:

Can you send me one number of THE JEWELERS' CIRCULAR, the July number of 1886, Vol. XVII. I want it to complete the year, which I intend to bind. Send soon as possible, and oblige,

Yours respectfully,

C. P. ELDRED.

Honesdale, Pa., June 26, 1888.

To the Editor of the Jewelers' Circular:

I would like to know the receipt for oxidizing and coloring brass, same as used on surveyors instruments, or how to prevent brass from tarnishing. You will greatly oblige the undersigned by answering by letter, but if you are not in the habit of doing this, will be pleased to see answer in the columns of THE JEWELERS' CIRCULAR.

Yours respectfully,

DAVID M. BOWERS.

Greencastle, Ind., July 9, 1888.

[The finish you refer to is probably what is called "burnished." It is made by shellacing the polished surface of the brass with a peculiar kind of French varnish, procurable of dealers in this kind of goods. We have sent you by mail the name and address of a dealer.—Ed.]

To the Editor of the Jewelers' Circular:

In the March CIRCULAR is an article on Jewelers' Protective Agencies, in which some associations of that character are referred to. The merchants of this town wish to organize an association for mutual protection, and would like to get some points as to the laws which should govern it. If you can get me a copy of the rules governing some association having the same object in view as the one we propose to form, you will confer a favor.

Yours truly,

C. W. JOHNSTON.

Front Royal, Va., July 11, 1888.

[We have mailed you a copy of the Constitution and By-Laws of

the N. Y. Jewelers' Board of Trade, an admirable institution of the kind you inquire of.—ED.]

To the Editor of the Jewelers' Circular.

What is the price of "Refraction and Accommodation of the Eye," by Donders? Yours respectfully, E. L. MCKENZIE.

Montrose, Pa., July 18.

[The publisher's price is \$5, and it can be obtained at same price, post paid, from The Jewelers' Circular Publishing Co.—ED.]

Lubrication, and the Quality of Watch Oil.



THE METHOD of distributing and applying the oil is of more importance than might be thought, and has a very marked influence on both the time of going and the rate. Oil that is very fluid may be used for the escapement and fine pivots where only a small quantity is needed and the pressure is slight; but it is not suitable in other places on account of its tendency to spread and thus leave the rubbing surfaces.

If too much oil is applied the effect is the same as if there had been too little; it runs away and only a minute quantity is left where it is wanted.

The oil intended for use as a lubricant for watch works should be kept away from the light, as otherwise it would be discolored; it is on this account that the bottles containing such oil are preserved best by being covered with black paper. Only the quantity wanted for immediate use should be placed in the oil cup.

Two preliminary tests will afford some indication as to the quality of an oil. A thick layer is placed on a small portion of the surface of a glass plate, and side by side a similar layer of another oil is used for comparison, and they are exposed to the air for some time without being touched. The one that is found to be sticky under the finger when the other has dried up, will, in all probability be preferable. The second preliminary test is made on a whetstone; it is usually found that the oil that takes the longest time to thicken is of better quality. Of course, these tests will only suffice to afford a rough approximation, and cannot be accepted as conclusive.

The mode adopted for testing either the acidity or the purity of oil will afford no evidence as to how long it will maintain its fluidity, and very good results have at times been secured by the use of oils that were slightly acid, or from mixtures of oils of two or more qualities.

Many of the methods recommended for purifying oils are, to a great extent, illusory, for they cannot impart to the fluid characteristics that are wanting from the beginning. Success depends largely on the skill of the manipulator, and if he is not endowed with the power of judging, mainly by the taste, whether oil satisfies certain prescribed conditions, he can never be certain of the results. Crops differ as regards degrees of maturity, etc., from year to year, and the animals from which oils are procured are rarely in the same condition as regards health, age, nourishment, etc.

Tests made on a whetstone and on a window pane, as well as observations made on drops of oil placed in jewel holes, or in oil cups in a metal plate kept for the purpose—some of the drops being exposed to the air while others are in closed boxes—will afford valuable indications; and, according to the observations of Mr. H. Robert, it is safe to consider an oil bad if at the end of six or eight days after being placed on a plate of good brass it shows a marked green tinge—especially so if a clearly-defined fringe forms round the drop, or else if the brass itself is discolored.

After all, the only evidence on which the watchmaker can rely is that which he obtains by experimenting on watches which he keeps

to lend to his customers while their own are undergoing repairs, and these trials should last for at least a year.

And there is a great variety among the wearers of watches. Some live in constantly varying temperatures, often dusty; many ladies use perfumes; some persons perspire more than others; all these causes influence the oil and make it alter or evaporate more rapidly in one watch than in another.

To Secure the Maximum Permanency in Oil.—In the case of very many watchmakers who complain bitterly of the oils they employ, the fault is their own and not of the oil; for they neglect the most simple precautions both in purchasing and using it.

The following are a few points to which attention should be given:

Do not buy old oil from motives of economy.

Keep the oil away from the light, and only take in the oil cup the quantity required for immediate use, as stated above.

Ascertain that the watch cases close well. If they do not there will be air currents generated and the oil will suffer.

The oil in a cylinder escapement will always deteriorate very rapidly; some European watchmakers coat over the inside of the dome joint, and recommend the owner not to open it. By doing so, the oil can be maintained in good condition at the escapement for a long time.

Lastly, when closing a watch, the work should be conscientiously done. The point is very important.

When the parts are carelessly cleaned with soap or with impure benzine, they will, after a few months, assume a dull color, in consequence of a thin layer of the material used in cleaning having been left on the surface. It has at times been noticed that steel work was preserved from rust through the perspiration of the wearer, after being cleaned by certain fluids. Evidently this was due to a thin coating having been left on the surface of the metal. The conclusion to be drawn is obvious: clean carefully, push the pivots into rather hard pith, finish with a soft brush in proper condition and clear out all pivot holes with pegwood.

Watchmakers' Drills.



THE DRILLS used by watchmakers are generally made by filing the cylindrical steel wire slightly tapering, and then spreading the point with a single blow from a tolerably heavy hammer. Using a light hammer and effecting the spreading by a series of gentle taps will effectually spoil the steel. There is not the slightest occasion to anneal the steel for hammering, provided it is moderately soft. For all drills up to one-eighth of an inch in diameter the steel should not be forged, as the bulk of the metal is too small to heat to any predetermined temperature with any degree of certainty. Pivot drills can be made from good sewing needles, which are of convenient form to be readily converted into a drill. Firstly, the needle must be made sufficiently soft for working by heating till it assumes a deep blue color. The extreme end may be made quite soft, and filed slightly tapering to a trifle less than the size of the hole to be drilled. The point is now spread out by a sharp blow of a hammer—not by a series of gentle taps which would cause the metal to crack—and filed up to shape, the point being made more blunt than would be used for drilling ordinary metal. For drilling tempered steel the cutting angles must also be much less than usual. The thickness of the drill across the flattened part should be about one-third of the diametrical measurement. Finish up the end on a strip of Arkansas stone, a file being too coarse for such small work.

It is the great difficulty of getting such a very small piece of steel to an exact predetermined degree of temperature—hot enough to harden, but not so hard that it is burned—which makes the manufacture of these small tools uncertain, and this is abundantly proved

by the fact that of a half a dozen drills made from the same wire, thereby assuring uniformity of quality in the material, it often happens that some are exceedingly good and others of no use whatever, the difference being caused by the manipulation during hardening. This does not apply to drills or other steel things which are of sufficient size to show, by the color of their surface, how hot they are; but it is the tiny pieces which, by the contact with the flame, are immediately rendered white hot that are difficult to manage. By heating the drill and plunging it into the body of a tallow candle the hardening will be effected, but the steel will not be rendered so hard that it crumbles away under pressure in use. Thus, in one operation the drill will be hardened and tempered. Instead of tallow, white wax, sealing-wax and such like materials are adapted to the purpose.

There is another method which finds much favor with some: it is to envelope the thin point of the drill in a metal casing, and so get a bulk of metal which can be heated to a nicety, the drill inside being, of course, raised to the same temperature as the surrounding metal; the whole is then plunged into oil or water. Still, there is the difficulty of tempering to overcome, though the danger of burning is avoided; burnt steel is of no use for tools.

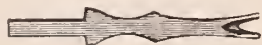
The best plan is to exercise the greatest possible care not to over-heat the drill, and harden and temper in one operation by plunging into tallow. The following method dispenses with the hardening process:

Select a round pivot broach; as sold, they will be found to be tempered to the correct degree of hardness. By means of the split gauge, measure the part of the broach which is the exact diameter required for the intended hole, and break off the steel at that point; the small piece is used; it must be broken off if too long and cemented into a drill-stock by shellac; an ordinary drill-stock will do, or a piece of brass joint wire serves the purpose. Soft solder may be used instead of shellac, and if carefully heated the temper will not be drawn. The piece of tapering steel is now formed into a drill by grinding down the sides with a piece of Arkansas stone, and the end shaped up to a cutting angle. The thick end of the broach forms the cutting end, and the ordinary taper of a broach will be quite sufficient to give clearance to the drill, which may be sharpened by grinding until the whole is used.

Utensil for Lifting of Balance Spring Collet.

IT IS OCCASIONALLY quite difficult to remove an obstinately seated balance spring collet, and if the watchmaker does not use some appropriate utensil, it is very likely that either the spring or the balances, or perhaps both, are bent before the removal is effected. The ordinary method of performing this work with a sharp knife or a small screw driver, cannot, in such instances, always be used with safety. I would therefore recommend the little instrument used in the watch factory of Pateck & Co., in Geneva.

It is made of sheet steel, 1 millimeter in thickness, and has the shape of a swallow tail; the slits are rounded off inside with a round file, so that the inner rounding forms a cutting edge. The little



instrument is cemented to a handle of corresponding size to permit it to be used with convenience. When it is desired to lift off the collet, the instrument is inserted below it and a pressure is exerted, the balance is moved to and fro and the collet loosens with facility.

The case has never yet occurred to me that either the spring or the balance were bent in the operation; on the contrary, another advantage may still be stated, viz., that the collet, together with the

spring, will not fly away, as it is apt to do when a knife or a screw driver is used. The collet raises slowly and equally all around, so that when sufficiently lifted up it may be taken off with the tweezers. —ANTON BUSCH.

Electrical Discoveries and Horology.



THE NUMEROUS discoveries in electrical science, or, rather, the innumerable applications of electricity to the modern requirements of man, have added new problems for our horologists to solve. It has been known, almost from the existence of watches, that their delicate mechanism was highly susceptible to magnetic influences, and manufacturers of marine chronometers many years ago exercised their ingenuity to prevent their instruments from being influenced by the magnet. Our attention has been called to an article printed in *The Revue Chronometrique*, which we reproduce in another portion of THE CIRCULAR, wherein is described the means adopted by Messrs. Arnold and Dent to protect chronometers from the magnetic influence. Their experiments were published as long ago as 1833, and the report of them will be found of interest. Others followed in their footsteps, and various devices were conceived to protect marine chronometers from the disastrous effects which magnetism sometimes exerted upon them. While these horologists are entitled to every credit for the ingenuity displayed in overcoming the difficulties presented to them, they had no conception whatever of the fact that at a later day the almost universal adaptation of electricity to ordinary business purposes would render it necessary to surround the ordinary watch one carries in his pocket with safeguards against adverse influences, as it was in their day to protect the marine chronometer from the adverse action of the magnet, or of magnetism, however developed.

The introduction of electric lights, requiring strong and powerful currents for their operation, and the immensely powerful dynamos necessary for the generation of these currents, has brought a very large class of persons within the immediate influence of the electric current, and, as all men in these days carry watches, the derangement of pocket timepieces had become very common. The problem presented to the horologists of the present day was to discover some means of rendering the watches of ordinary use non-susceptible to the influence of powerful and very common currents of electricity. Instead of being called upon to overcome a difficulty found in a comparatively few special cases, as in the marine chronometers, they had to make the every-day watch of the average individual non-magnetic. Unless this could be done, the great watchmaking industry must necessarily be greatly injured, for the sale of watches is dependent upon their trustworthiness. Whenever a great emergency confronts the human race, the man to grasp it has always been found; so in this emergency the horologists have proved themselves worthy the trust reposed in them for the protection of the great interests under their charge. Not only one, but half a dozen scientists came promptly forward with their different devices for protecting watches from electrical influences, and to-day watches are made that defy the strongest currents of electricity that are used in any industry. Every manufacturer of watches has some device of this kind, and non-magnetic watches are to be found in the stock of every dealer. The men who devised them are as much original inventors as though no one had previously experimented in a similar direction years ago with marine chronometers; the conditions of the emergency that was upon them were so entirely different, and the means used to overcome the difficulty are so varied, that they are entitled to all the credit that attaches to an original invention. While we do not wish to detract in the least from the well-earned and worthily-worn honors of their predecessors, we do desire that the horologists of to-day shall

have full credit for their ability to meet successfully any difficulty or emergency that may be suddenly sprung upon them. It is not too much too say for them that in this instance they rescued a great and important industry from serious peril with which it was threatened.



[FROM OUR SPECIAL CORRESPONDENT.]

LONDON, July 9, 1888.

In endeavoring to estimate the trade prospects of any particular industry, it is always well to take note of the state of the general trade of the country. To do this just now is very encouraging. The returns issued by our Board of Trade for the month of June and published to-day, are certainly favorable. The good average of previous months has been maintained, and it is with satisfaction that our manufacturers will notice that the total of our exports for the past half year (to June 30) is £8,382,000 more than the total sum for the first six months of 1887. It is also worth noticing that the increase for the past month is better distributed over the various classes of exports than the increase for the months immediately preceding. Our industries must in time participate in the general benefit, and it is satisfactory to notice that in some of our branches the past few weeks have witnessed an improvement. I trust this will prove a permanent and not a mere temporary activity, and that it may be safely taken as an indication of a return to the prosperity we enjoyed a few years since.

It is admitted in some quarters that already the trade of the season has been better than for the past few seasons to this date. The stud and solitaire and sleeve-link manufacturers have been busy. Some houses, particularly the proprietors of patents, are doing good business. It is difficult to say why some articles should be considered as in season at a particular time. Yet it is the case, and the present seems to be the season for studs and solitaires. I am referring now to the season for their manufacture. I cannot offer any explanation of this, because my personal requirements in this line are pretty much the same the year round, and I am not aware of much difference in this respect between myself and other men. It is apparent to every one that the manufacture of "pebble jewelry" is a season trade, and I hear that this season has been a good one for the production of seaside novelties and for shipping.

Booth Brothers, of Birmingham, have laid themselves out for the production of seaside and tourists' novelties. Among their quaint articles I may mention sea bean, sea shell and alligator-tooth bangles, and their "claw" brooches and bonnet ornaments.

Our seaside resorts are very favorable places for observing "what is worn." At present I have only made very brief visits there. I shall have a longer stay shortly, and shall then have little else to do than look about me. I purpose doing that and giving you the results. While at Hastings for a day I noticed that parasol and umbrella handles are still worn ridiculously large. This is apparent enough in London, but I had an opportunity of seeing what I had not seen in town, namely, one of these immense handles terminating in the head of a horse in silver. By touching a small spring, this opened and disclosed a lined receptacle in which was a tiny bottle of scent. My friend, the owner of the horse's head, informed me she had seen similar handles in Paris terminating in cat's and dog's heads, and in a well executed bouquet of flowers, all in silver and all opening with a spring.

The practice of wearing a watch on the wrist is becoming more

general, and as our summer costumes are adapted for displaying the wrist and its coverings, ornamental bracelet watch holders are in demand by those devotees of fashion who have discontinued to wear their watches in their dress bodice. Appleby & Co., of Birmingham, have patented an ingenious watch holder. The watch is fixed in position from the inside of the bracelet, the bow falling into a slot. When the bracelet is on the wrist the watch cannot possibly fall out or be taken out, as being inserted from the back, or rather from the inside of the bracelet, the wrist keeps it securely in its place. The specimen I saw was of plain open work, but there is scope for a great variety of ornamentation. I may be permitted to say that I do not like the fashion. The patentees, however, need not be annoyed at my saying so, for I am sure that so long as it is the fashion, nothing that I may say will interfere with the sale of a single one.

A novelty in lockets is worth alluding to. It is a rather large, flat locket, either neatly chased gold or gold ornamented with gems. In the place usually devoted to a portrait is a strong magnifying mirror. The idea is novel and the specimen I saw was costly. I cannot record any other merit.

There has been considerable excitement lately in reference to the present output of the several South African diamond companies. The policy they have been pursuing of flooding the market at miserably low prices, in order to provide funds for the payment of unhealthy dividends, is likely to prove disastrous. How can it be otherwise? Diamonds must cease to be appreciated when they cease to become rare. There has been much talk about the amalgamation of companies and controlling the market, but it has not gone beyond talk, and at present competition is as fierce as ever and the inevitable result must come, the trade will be demoralized and some of the companies will be ruined.

There is not very much doing this month in plated goods. It is a kind of mid-season in the factories, and the work that is chiefly to be found there is anticipatory of future demand rather than in supply of present necessities.

It is the fashion with us now to substitute lamps and candelabra for gas. The custom is spreading, and some of our plate manufacturers are—very wisely, I think—providing all sorts of novel combinations for effective domestic lighting. Handsome oil lamps, plated and gilt and fitted with semi-opaque shades in all the fashionable shapes and colors, will be in great demand as the winter approaches, and manufacturers are well advised in turning their inventive attention to this branch of trade early.

Tea and breakfast table requisites are still made as light as possible. There are many new designs in silver and plated cruets, butter dishes, toast racks, etc., but they are all delicately made. Even on special occasions it is very seldom one sees any of those elaborate massive pieces that were once so much admired.

I must not incur your censure for being too lengthy in my communications. I can conclude with the expression of my belief that as far as our trade here is concerned, there is a reasonable prospect of an improvement all round. There are indications on every side of a revival of business generally, and if our manufacturers and retailers will take full advantage of the opportunities, they may be benefitted participants in it.

VIGILANT.

To Replace a Worn Out Winding Square.

THE following is a handy way to replace a worn out square on a winding arbor. If the old square is not already too thin, file nearly round and cut a good thread in a screw plate; take a piece of square steel and drill a hole into it somewhat smaller than the thickness of the screw and tap with a hardened screw drill; countersink the lower end in order to fit well, fix the piece on to the screwed arbor and finish off, when the new square will answer every purpose.

For a going barrel make a right hand, and for a fusee a left hand screw. In case the square of the screw is too much worn to allow filing round and yet leave a sufficient body for screwing, cut it entirely away and drill a hole in the center of the arbor; take a piece of hardened square steel, slightly conical at the end, drive into the hole and finish off. To insure the utmost security, which, however, is not essentially required, the pieces may be soft soldered in addition to the fastening by screwing or plugging. The same manipulation will answer for square to fit on the stop finger on stop work of Geneva watches, also for French clocks, musical boxes, etc. The auxiliaries may perhaps be condemned by some watchmakers who strictly maintain the necessity of replacing every damaged part of a watch by an entirely new piece; but after giving the arbor merely once a trial, will, no doubt, be adopted, as it combines efficiency with economy.



[FROM OUR SPECIAL CORRESPONDENT.]

KIMBERLEY, June 11, 1888.

The development of the gold mining industry in the Transvaal is the great event exciting attention here for the present, as it is, indeed, throughout the whole of the South African colonies and states. The Transvaal gold fields are a genuine reality, and likely to affect the gold production of the world during the next decade. They are yet in their infancy, and the comparatively small output at present is no criterion whatever as to their extent. Experts from all the old mining centers of the world have visited the fields, and they bear almost unanimous testimony to the marvellous richness of the deposits. Briefly expressed, there is scope for effort for a large population for many years to come. Only about one-fortieth of the properties are as yet being worked, the delays and difficulties in getting machinery from England, America and Australia preventing anything like full scope. About 200,000 ounces per month is the rate of present production, but this is certain to steadily increase. The companies already floated represent a total capital of over twelve million pounds, and new ones are being daily placed on the market. That there is much mad speculation can well be understood and plunges are certain to occur. A great amount of Kimberley capital is invested in the fields, and as much interest is exhibited in gold mining as in the getting of diamonds.

Regarding the latter, there is just now a very uncomfortable feeling here. They are depressed in prices, and alarmists have succeeded in making many people believe that they are slowly going out of fashion in Europe, America and India. Fears are general that diamonds will, in the future, so recede in value that their production will not justify the heavy outlay. The aim of the "diamond kings" is to so regulate production that the markets can never be overstocked and thus keep up the prices. This has been the great idea kept in view in carrying through the great amalgamation scheme by which the whole of the Kimberley mine and the De Beers' mine come under the control of one company. Last week the management of this gigantic concern—said to be the largest in the world—produced an extraordinary crisis. Upon cables of the depression in the European diamond markets, and, as they state, partly also in consequence of the high rates of fuel (which forms an important item in working expenses), they suddenly decided to reduce operations to

half their former proportions. The result is that some thousands of European and native employees find their occupation gone, and were it not that the gold fields offer scope for this class their prospects would not be very bright. For a few days the share market was completely disorganized, but more favorable news having been received from Europe, recovery has taken place. What course will be pursued regarding production is not yet clear, as the company continues getting only half the former quantities of diamonds. As yet they have not a monopoly, as the Dutoitspan and Buelfontein mines are owned by other companies, which can increase their present production if it is thought desirable. It should always be understood that the supply of diamonds is practicably inexhaustible, and that the cost of getting them from the mines is the only important consideration to the companies interested. Parenthetically, it may be remarked that there is not a single individual claim-holder now left. They have all been bought out by the large companies, who can work a number of what used to be claims at a much smaller cost than the individual.

The report of the Commission on the Diamond Trade Act and the Trapping System has just appeared, and although it has not startled people as was predicted, it is a remarkable volume. The evidence goes to show that at one time one-third of the diamonds found got into the hands of illicit dealers, but that at present the traffic is circumscribed. The detective department comes out of the ordeal well, and the charges of corruption have not been proven. The Commission make some unimportant recommendations which have been embodied in a bill now before the Cape Parliament. The present system is to be continued, and, one supposes, there will be a continuation of convictions and punishments for this crime. Lately, the detective department has been using European females as "traps," and several convictions have resulted. In evidence before the Commission, it transpired that £500 and sometimes £1,000 is given by the department for the trapping of an especially wily illicit. If traps remain on the fields after giving evidence they run great risks, and not unfrequently carry their lives in their hands from day to day. As a rule, they leave for other pastures after business of this nature.

Some of the most beautiful and valuable diamonds sent to Europe and America have actually passed through the bodies of African natives. The latter contribute the greater portion of the supply of labor in the mines, and their peculations are one of the great hindrances to successful operations. They are carefully searched when they leave the mines, but they have become very wily and will risk a good deal to obtain what to them is a small fortune. Hiding the stones in the mouth, ears, nose and other orifices of the body are far too old expedients for the searchers who examine the native employees while the latter are naked. The customary ruse of the native is to swallow the diamond unperceived and trust to nature for its restoration afterwards when he is away from supervision. He is frequently detected in this process, and, of course, is taken in charge by the overseer and confined until the gem is restored. Strong aperients are not unfrequently forced down the throat of the nefarious native to quicker operations. Strange to say very few deaths occur from this extraordinary business. Now and then they occur, and the post-mortem generally includes a search for the missing stone. The other day a native was detected in the swallowing feat, and in due course a pretty gem of 80 karats came to light.

The constitutions of those men must be wonderful. It is pretty certain that in former years some thousands of karats of diamonds must have been carried away from the mines in the bodies of natives. They are sold to the illicit dealers, who still fatten upon the traffic. The principal companies, however, are now adopting what is known as the compound system. When the natives engage they undertake to live in quarters provided by the employers, and never to leave the enclosure until the expiration of their term of service, which is usually six months. Very few natives will remain at work for a longer period without a long rest, or, at any rate, a long spell of dissipation; and facilities for the latter are great. As a matter of fact,

the Cape Colony is the paradise of the toper. There is no excise upon brandy, which is produced in large quantities in the vineyards near Capetown. On the fields it is retailed at about sixpence per pint, and that quantity of the seductive fluid is sufficient to keep a man very stupidly or very dangerously intoxicated for twenty-four hours. The results are appalling drunkenness, not only amongst the natives, but also among the lower class Europeans. The liquor is sold to the natives in pint bottles, and they usually drink the liquor neat. They carry the bottles about with them in the streets, where on Saturday afternoons and evenings there are orgies and Bacchanalian spectacles of a lively kind. That sad havoc is the result can well be imagined, but the government have never yet been induced to restrict the supply by legislative measures. In the compounds the men are supplied with a reasonable quantity of liquor, and, no doubt, altogether they are better cared for than when left to their own uneducated and uncontrolled inclinations. The companies that have adopted the compound system seem well satisfied with its working, and the natives also seem to appreciate it. In the now famous De Beers' mine, there have been until recently 3,000 natives employed and compounded in this fashion.

The question is often raised at a distance, why Europeans are not employed in the mines instead of these dishonest natives. The reply, briefly, is that it would not pay to employ European labor exclusively. The native, being accustomed to the climate, can perform as much manual labor as two Europeans, and for about £3 per month cost he is available for services which, if performed by Europeans, would probably cost £20. Where some thousands of men are wanted this difference is of importance. At the same time there are many experienced managers who contend that, having regard to the losses by theft, it would, in the end, be more economical to employ Europeans alone.

Official figures are not always interesting, but they are valuable from their accuracy. It would seem from recent returns laid before Parliament, that last year (1887) 1,333,832½ karats of diamonds, valued at £1,410,208, averaging 21s. 1¼d. per karat, were taken from the Kimberley mine; 1,014,048 karats from De Beers', valued at £1,022,878, an average of 20s. 2d. per karat; 696,576½ from Dutoitspan mine, equal to £987,284, or 28s. 4d. per karat; 602,246 karats from Bulfontein mine, valued at £612,962, 18s. 6d., or 20s. 4¼d. per karat. A good idea of the output of diamonds during the early part of this year may be gathered from the circumstance that the Kimberley mine has, up to the end of March, produced each day diamonds to the value of £4,520; De Beers', £3,400; and Dutoitspan, £3,200. During last year the export of diamonds from South Africa aggregated 3,598,930 karats, valued at £4,242,470. In 1886 the exports were 3,135,061 karats, valued at £3,504,756. The above are purely official figures, and there is not, of course, any record of the diamonds illicitly sent away.

It may be worthy of notice that the export of copper ore from the Cape Colony has remained almost stationary recently, but a large increase in value is expected this year. The Cape Copper Mining Company have just concluded a favorable contract with the French Copper Syndicate for the sale to the latter of 75,750 tons pure copper per annum for a term of three years at £70 per ton, which, I am given to understand, will yield a profit of over £250,000 to the company, equal to £11 per share, on which only £8 is paid up.

The importation of specie to South Africa has been nearly two million pounds this year. If the Exchange continues to rule as at present, more will have to be imported to supply the demand for money in the country. Of late banks have been selling sight exchange at a discount and buying at 90 days. Commercial drafts as low as 1½ to 2 per cent. discount. This brings us near to the specie importing point. As the exports, including mining shares, are far in excess of our imports, the balance of trade has to be adjusted by the importation of specie, of which further heavy shipments are afloat.

This is mid-winter in Africa and the weather is bitterly cold.

The Functions of the Banking Pins.



THE BANKING pins have nothing whatever to do with over-banking. They only regulate the run, or, in other words, the distance the pallet jewels travel in toward the scapewheel. If the banking pins are too far apart, the scape teeth reach too far up the locking planes of the pallet jewels, and the balance, having, therefore, to carry the fork so great a distance before the scapewheel teeth act on the impulse planes, meets with so much resistance that the motion is very much decreased thereby, and often causes the watch to stop altogether. In a correct escapement the fork should bank against the pins, immediately the scape tooth has dropped from one jewel to the other. If the watch overbanks, the fork is either too short or the roller is too small; in most cases, unless the roller has been tampered with, the trouble lies with the fork. The effective length of the fork should be such that, when the power is on the watch, if the guard point of the fork is pressed against the roller, it will, on being released, return to the bankings. In no case should the fork be left so short that it can be wedged against the roller, as the watch would be liable to stop at any time, and if it got a jar would, in all probability, start off again, and so cause a great deal of trouble in locating the stoppage, in addition to the annoyance to customers.

The fork in Swiss watches may be lengthened several ways. Draw the temper, if necessary, and stretch it with the pene end of the hammer, on the part between the notch and the center. If done this way care must be taken to see that it is not bent by the stretching, and, if so, straighten before putting in the watch, or else it would have too much run on one side and not escape on the other. Another way is to file back the old guard point or edge, drill a hole, and fit a new one having a pivot on the bottom to go through the hole. Rivet it in place, if possible, if not, solder it carefully. It can then be shortened to the correct length and the fork repolished.

If the watch is an English one, the brass guard pin on the end of the fork will have to be bent forward a little, and if that wont rectify it a new fork must be fitted, but it is necessary to examine everything in connection first to make sure the trouble is in the fork, as the balance jewels might be broken or too large in the holes and thus allow the roller to drop away from the fork sufficiently to cause overbanking or the balance staff might be badly out of true, which would cause the roller to be cut in the round, and that would cause it. In any case examine the escapement thoroughly and locate the defect before making any alterations.

To Retard the Balance Vibrations.



AN EARLIER number, says X., in *Deutsche Uhrmacher Zeitung*, contained an article advising the elongation of the balance spring with a burnishing steel. This method, however, considered from a correct standpoint, is not to be recommended, because by the rubbing of the spring with the burnishing steel its condition is very apt to be impaired, even if rubbed throughout its whole length. This will increasingly be the case if, as stated in the article, only a part of the spring is to be rubbed to overcome the acceleration of the watch. The rubbed part of the spring is naturally diminished in thickness by this operation, and will therefore endeavor to make vibrations different from those of other parts which retained their natural thickness. It is plain, therefore, that such a spring will not develop uniformly and perform with precision. Beside this, it is rather difficult even for a skilled workman to re-coil a spring stretched in this manner.

For these reasons I am so bold as to recommend another method for retarding the vibrations of the balance; it is based on the greater

specific gravity of platinum; although not new, still it appears not to be generally known.

The specific weight of platinum is from 20.9 to 21.7; that of brass, however, only 8.4 to 8.7; platinum, therefore, is $2\frac{1}{2}$ times heavier than brass. When, now, the balance spring is too short and the time of a

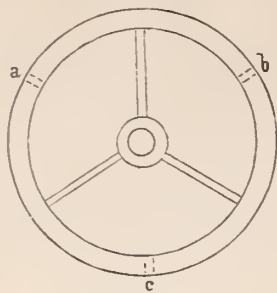


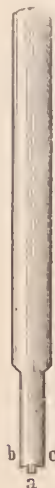
FIG. 1.

watch with ordinary balances accelerates, drill at equal distances, through the balance rim, fine holes (a, b, c, fig. 1), of about the thickness of the banking pins of a cylinder watch, and fasten in it platinum pins, which must not project on the outside, so that almost nothing beside the white color of the pins can be seen. Three such pins effect a retardation of about 15 minutes in 24 hours.

With compensated balances it is still easier, since it is only necessary to place small, thin platinum washers under the screws at uniform distances.

These washers are cut with a punch (shown in fig. 2 in an enlarged size) from thin sheet platinum, of the thickness of from 0.02 to 0.08 millimeter, for which purpose punches of three different sizes are necessary. The lower projection a corresponds to the thickness of the screw spindle, and the diameter of the part b c to the head of a balance screw.

The advantage of this method consists in the fact that the watch may in a very short time and with little trouble be made to go exact, and beside this an unequally heavy balance, which cannot be made lighter, can be very easily brought into equipoise in this manner.



The Motion Work.

AS WAS stated in a preceding article on the "Motive Power of Clocks," the wheel work of the ordinary class of timepieces, with regard to the functions of their wheels, may be divided into three parts, two of which we elucidated in said article, and it remains to speak of those of the third part, which is located underneath the dial. This part is called the motion work, and ordinarily consists of two wheels and two pinions—the canon pinion, the minute wheel pinion, the hour wheel and the minute wheel. The canon pinion is mounted with a boss or pipe (the canon upon which it is fastened) upon the prolonged arbor of the center wheel, in such a manner, however, that although it is carried in its revolution around by the arbor, it can nevertheless be rotated so that the hands may be set, and it must therefore fit with easy friction only upon the arbor. The hour wheel sits with a short pipe upon the canon pinion subject to the same conditions. The hour hand is mounted upon the pipe of the hour wheel. The minute wheel, which is driven by the canon pinion, finally, together with the minute wheel pinion attached to it, runs loosely on a stud fixed to the plate of the watch at a proper distance from the canon pinion, so that the leaves and teeth of the two depth into each other, while the minute wheel pinion drives the hour wheel. The minute hand is fixed to the pipe of the canon pinion. The ratio of the sizes and the number of wheel teeth and pinion leaves is governed by the fact that the hour wheel shall make

only one revolution while the canon pinion makes twelve. If, therefore, the canon pinion has 24 leaves and the minute wheel has the same number of teeth, then both accomplish their revolutions at the same time, and it is necessary to use a proportion of minute pinion leaves and teeth of the hour wheel, that shall stand as 1 : 12; for instance, a minute wheel pinion of 6 leaves and an hour wheel of 72 teeth. The product obtained by multiplying together the number of teeth in the minute and hour wheels must be 12 times the product obtained by multiplying together the leaves in the canon and minute wheel pinions. In house clocks, where the striking work is discharged by a pin in the minute wheel, the motion wheel carrying the minute hand has the same number of teeth as the minute wheel, and the low wheel has then 12 times the number of teeth that the minute wheel pinion has. In turret clocks, where the striking is not discharged by the motion work, the arrangement is similar to the motion work in watches.

Better than the ordinary arrangement, in which the hour pipe revolves upon the minute canon, is by mounting a bridge over the latter, provided with a shell, which surrounds the minute canon without touching it, and upon which the hour pipe runs free and well. The bridge shell is turned in in the center to prevent the hour pipe from rubbing upon it with its entire inner surface.

RULE.—The number of teeth of the hour wheel, multiplied with that of the minute wheel pinion. For instance, the hour wheel has 32 teeth and the canon pinion has 10 leaves. The question is how many teeth must the minute wheel and its pinion have? We say:

$32 \times X : y \ 12 : 1$; consequently is $32 X$ divided by $12 = 10 y$; $32 X = 120 y$; $X = 3\frac{3}{4} y$.

Since the number of minute wheel teeth are designated by X and the pinion leaves with y , we have found the proportions of the two unknown factors, to wit, 1 : $3\frac{3}{4}$, or 4 to 15, or 8 : 30. It is necessary at the same time to choose the number of teeth of such a ratio that they will be well proportioned as to size. It is also well to remember that there is an advantage in making the canon the larger pinion, which is often overlooked. With a small canon pinion the oil is invariably drawn away from the center wheel lower pivot. If a larger canon pinion is used, a square sink or recess may be cut in it which will effectually cure this defect.

In house clocks the canon and minute wheel have each the same number of teeth, for the convenience of letting off the striking work by means of the minute wheel, which thus turns in an hour; consequently the hour wheel and its pinion bear a proportion to each other of 12 : 1. Generally a pinion of 6 and a wheel of 72 are used.



[FROM OUR SPECIAL CORRESPONDENT.]

ATTLEBORO, July 20, 1888.

Campaign badges are being manufactured about here just now. The manufacturers commenced early, and the prospects are good for a continuance of the trade till late in the season. Four years ago one or two of the firms went into the business and made lots of money. There was scarcely any competition, and, of course, they made their own prices; but the conditions are different this year. There are a dozen big firms here and many more in Providence who are devoting their time to this work. The result is the work has to be done pretty cheap, and after the expenses are all paid the margin is rather small. But the shops are all running full time and with a

full complement of workmen at fairly good prices. The Attleboroans, therefore, are glad it is presidential year. Other lines of work are also very good, and have been for a month back. The time was, and that not many years ago, when the jewelry trade began to boom about July 10, but for several years the business has started up earlier and earlier until now it is expected about the latter part of May. The manufacturers here are watching with interest the course of the tariff legislation in Congress. Any change in the tariff on gold and silver would, of course, greatly affect these men one way or the other. Of course, there are differing opinions in regard to what is best to do, but the political complexion of the people here is very strongly Republican; in fact, I believe there is only one manufacturer who claims a place in the ranks of the Democracy.

ATTLEBORO.

I made a trip through the shops of this town the other day for the purpose of learning who were working on campaign goods and how much they were doing. The first place visited was the firm of Horton, Angell & Co. This is one of the old firms. Their specialty is "buttons," but just now they are making an immense quantity of campaign badges. I counted as many as twelve different styles, and it must be remembered this is only one firm.

Tappan, Berry & Co. have a novelty in a button which is having a large sale.

Wheaton & Richards are doing something in this line.

J. M. Fisher & Co. were among the first to come out. Their regular line is charms, and they are now putting photographs of the different candidates into their lockets. The idea takes well.

Watson, Newell & Co., the firm who made such a good thing out of this business four years ago, are not pushing it this time. They have a few patterns, but are keeping their shop busy on their regular trade.

Blake & Claflin, with an energy born of what they thought a prophetic foresight, early commenced the manufacture of Blaine badges which they are now prepared to sell cheap. But they were ready with a Harrison pin in just twenty-six hours after the nomination. They are making quite a variety of styles.

Daggett & Clap are doing a little better class of goods than most of their competitors. They have a very pretty rolled gold pin which meets with a ready sale.

Cummings & Wexel are also doing a large business, mostly in lapel buttons.

The firms of T. J. Smith & Co. and F. G. Whiting & Co., of North Attleboro, are the only ones doing much in this line in that village. I made a few inquiries in regard to the orders, and found that by far the largest were for Republican badges. There is a mint of money being invested in this work, but I believe a good return is assured.

Mr. J. F. Ripley, of Watson, Newell & Co., has recently made two short trips. He told me the other day that the western jobbers were making preparations for a large fall trade, and he expected to see plenty of work.

Mr. S. O. Bigney, of Marsh & Bigney, is another sanguine man. His firm is very busy and he expects a great business from now on.

NORTH ATTLEBORO.

With good business, this is the busiest town in the commonwealth. Everybody seems alive to the interests of the town, and with good railroad accommodations it would pass the old town of Attleboro on a gallop. I find very little campaign work being done here, but everybody seems to have plenty to do in their regular line.

Bugbee & Niles are very busy. I called at their office a few days ago, and Mr. Bugbee showed me a new sample case he was just making up. I should like to be the fortunate salesman who will carry them to the trade.

Mr. J. E. Draper's new building is completed and several firms

have already moved in. Among others is F. Mauser & Co., who are making some handsome novelties in silver goods. T. G. Frothingham & Co. have also taken up their quarters here.

A party of ten of the employees of J. G. Cheever & Co. have been on a yachting excursion.

The business here is considered fully up to the expectations, and the prospects are good for a splendid fall trade, for which nearly every firm in town is preparing.

MENDON.



The following list of patents relating to the jewelry interests, granted by the U. S. Patent Office during the past month, is especially reported to THE JEWELERS' CIRCULAR by FRANKLIN H. HOUGH, Solicitor of American and Foreign Patents, 925 F Street, N. W., rear U. S. Patent Office, Washington, D. C. Copies of patents furnished for 25 cents each.

Issue of June 26, 1888.

385,042—Mariners's Recording Compass. Henry A. Chase, Stoneham, Mass.

385,043—Electric Alarm Compass. Henry A. Chase, Stoneham, Mass.

385,073—Finger Ring. William P. Sinnock, Newark, N. J.

385,160—Clock Dial. Archibald Bannatyne, Waterbury, Conn.

385,179—Mug. Zachary T. Hall, Philadelphia, Pa.

385,313—Bracelet Chain. Gustavus A. Lenau, Providence, R. I., Assignor to himself and W. E. White & Co., same place.

Issue of July 3, 1888.

15,658—TRADE MARK for Alloy for Jewelry. Joseph Muhr, Philadelphia, Pa. "The word 'Crown,' or a pictorial representation thereof."

385,612—Watch Case. Charles K. Giles, Chicago, Ill.

Issue of July 10, 1888.

15,675—TRADE MARK for Engravers' Plates, Dies and Tools. John Sellers & Sons, New York, N. Y., and Sheffield, England. "The letter 'S' pierced petically and centrally by a sword."

385,749—Process of Casting Ingots. Cyrus C. Currier, Newark, N. J.

385,776—Manufacture of Paste for Polishing and Protecting Metals from Rust. Sigmund Rosenfield and Johan Zeleny Gablonz, Bohemia, Austria-Hungary.

385,783—Process of Plating Ingots. William F. Whiting, Providence, R. I.

385,836—Feeder for Ingot Molds. Sidney H. Boucher, West Bergen, Assignor to C. C. Currier, Newark, N. J.

385,837—Feeder for Ingot Molds. Sidney H. Boucher, West Bergen, Assignor to C. C. Currier, Newark, N. J.

385,876—Button. Charles A. Pierce, Dover, N. J.

385,908—Watch Mainspring. Duane H. Church, Waltham, Mass.,

385,909—Alloy of Copper, Nickel and Gold. Duane H. Church, Newton, Mass.

385,945 to 385,955 inclusive—Alloy. Daniel O'Hara, Daniel W. Eldredge and John Logan, Waltham, Mass.

386,002—Collar Button. Edwin T. Dahlberg, Beloit, Wis,

386,004—Repair Clamp for Spectacles. Newton J. Eddy, Portland, Mich.

Issue of July 17, 1888.

386,103—Secondary Electric Clock Movement. Carl Bohmeyer,

Halle-on-the-Saale, Prussia, Germany. Patented in Germany July 12, 1887.

386,308—Watch Case Spring. Numa J. Felix, New York, N. Y.

386,398—Watch Case. Charles K. Giles, Chicago, Ill.

Issue of July 24, 1888.

15,715—TRADE MARK for Genuine or Imitation Diamonds. Henry E. Oppenheimer & Co., New York, N. Y. "The representation of a diamond in the center of a diamond-shaped figure."

386,448—Fountain Pen. John Blair, New York, N. Y.

386,557—Device for Winding Clocks by the Variations of Temperature. Isaiah L. Roberts, Assignor of one-half to Edmund Tweedy, Danbury, Conn.

386,592—Balance Escapement for Watches. Sirius E. Kochenderfer, Hollidaysburg, Pa.

386,762—Button or Stud. William F. Whiting, Norwood, Assignor to Hiram Howard and Steven C. Howard, Providence, R. I.

386,763—Button. William F. Whiting, Norwood, Assignor to Hiram Howard and Steven C. Howard, Providence, R. I.

386,764—Button or Stud. William F. Whiting, Norwood, Assignor to Hiram Howard and Steven C. Howard, Providence, R. I.

386,767—Watchman's Electric Time Recorder. George F. Bulen, Brooklyn, N. Y.

the other stories have a clear height of 12 feet, except the upper story which is about 14 feet high, making the total height of the building from the sidewalk to the top of cornice 74 feet. The first story has a front on Eddy street, and for a distance of 12 feet on Worcester street and 15 feet on Fountain street, making a total of about 150 feet of iron and plate glass, the sheets of plate glass varying from 8 feet 4 inches by 6 feet to 8 feet 4 inches by 8 feet. The upper stories are lighted by numerous large windows, there being in each story 45 windows with a superficial area of 1,350 feet, and as the building has but one blank side it is peculiarly well lighted from the outside, while the centre is lighted by a skylight 17x42 feet over a well with 20 windows from the well on each floor, having a superficial area of 780 feet, making a total area of glass surface for each story of over 2,100 square feet. It is built above the first story of Danvers pressed face bricks with a brick corbelled cornice, with window caps, belts, cornices and sills of rock face red sandstone. The building will be fitted up with hydraulic passenger elevator and steam freight elevators with out-riggers for hoisting heavy machinery, safes, etc., upright boilers and a Harris-Corliss engine of 100 horse power. It is to be heated by steam and to be equipped with a complete system of Grinnell sprinklers. Ample provision is made for ventilation, and it is liberally supplied with water-closets, sinks



"ENTERPRISE" BUILDING, PROVIDENCE, R. I.

New "Enterprise" Building at Providence.



THE PRINT herewith an illustration of the new building to be called the "Enterprise," now being erected at Providence. It is situated on three streets, Eddy Fountain and Worcester streets, with a frontage on Eddy street, which is the principal street and faces the railroad station, of 122 feet, 9 inches, with a depth of 100 feet on both Fountain and Worcester streets.

The building is five stories high, the lower story being fitted up for first-class stores, having a clear height of 14 feet, and each of

and other plumbing to fit it for the large business that will be done within its four walls.

The store floor will be occupied on Fountain street half by E. Winsen & Co., carriage supplies; The Worcester street half by E. W. French, doors, sash and blinds; Second floor, by F. A. Chase & Co., mill supplies and American Ring Traveller Company; The entire third floor has been leased by Howard & Son and The Sterling Co.; The entire fourth floor by Hamilton & Hamilton, Jr.; The fifth floor by Kent & Stanley, successors to Wm. H. Robinson & Co., who are the owners of the building. The well-known jewelry firms here mentioned who have received accommodations in this building

have displayed their usual enterprise in seizing upon the "Enterprise" promptly. It will not only locate them in probably the most elegant business building in Providence, but will give them light, airy, attractive quarters, and added facilities for the transaction of their business.

Precious Stones.

BY GEORGE F. KUNZ.

(The following is a portion of a very interesting article printed in the *North American Review* for July, 1888. Whoever is interested in the article should secure this very able magazine with the completed article.)



THE AMERICAN spirit of unrest finds its outlet in an incessant desire for change and novelty. In this we are sharply distinguished from the French, English or German, who believe that a good thing once is a good thing always. For us a thing must not only have excellence, but it must also be new or unique to satisfy the demands of this American trait. So in precious stones very few escape the imperious edict of Dame Fashion, who is influenced largely by the demands of her American followers. It is my purpose to note in this article a few of the principal changes which have taken place within a recent period.

During the last decade new stones have come into favor, some neglected ones have regained their popularity, and still others, such as amethysts and cameos, have been ushered out entirely. The latter, no matter how finely cut, would not now find purchasers at one-fifth of their former value, while ten years ago they were eagerly sought after at from four to twenty times present prices. Rubies were considered high ten years ago and a further rise was not looked for, but to-day they are still higher, a nine and eleven-sixteenths karat stone being quoted at \$33,000.

There is no demand at present for topaz, yet a syndicate of French capitalists has been organized to control the so-called topaz mines of Spain, in the expectation that after twenty years of disfavor this gem will again find favor in the sight of fashion.

Coral has felt the change of fashion, for during the last three years less than \$1,000 worth per annum has been imported, and in the last ten years in all, \$33,956, whereas in the ten years preceding \$388,570 worth was imported.

The popularity of amber, on the other hand, is increasing. The imports of amber beads for the ten years, 1868 to 1878, were less than \$5,000 worth, whereas during the last ten years \$35,897 worth have been introduced. Amber amounting only to \$47,000 was imported from 1868 to 1878, but over \$350,000 worth from 1878 to 1888.

Ten years ago few of our jewelers carried more than the following stones in stock: diamond, ruby, sapphire, emerald, garnet, and, occasionally, a topaz or an aquamarine. The gem and mineralogical collections, however, contained a large series of beautiful stones, hard and of rich color, that are now known as "fancy stones," and by the French as *pierres de fantaisie*. Since then considerable interest has centered in these fancy stones, and a jeweler is not only expected to be familiar with, but to keep in stock almost all of these. This change may be partly referred to the fact that since the Centennial Exhibition art matters have received more attention among us than before.

That the Duke of Connaught gave his bride a cat's-eye ring as an engagement token was enough to make the stone fashionable and to increase its value greatly. The demand soon extended to Ceylon, where the true chrysoberyl cat's-eye is found, and stimulated the search for it there. In the chrysoberyl cat's-eye the effect is the

result of a twinning of the crystal, or of a deposit between its crystal-line layers of other minerals in microscopic inclusions. If the stone be cut across these layers, *en cabochon*, or carbuncle-cut, as it is called, a bright line of light will be condensed on the dome-like top of the stone.

In the search for these chrysoberyl cat's-eyes there have been found an endless series of chrysoberyls of deep, golden yellow, yellow green, sage green, dark green, yellowish brown and other tints. They are superb gems, weighing from one to one hundred karats each, ranking next to the sapphire in hardness. They gave a great surprise to the gem dealers; for it was found that the darker leaf green or olive green stones possessed the wonderful dichroitic property of changing to columbine red by artificial light, the green being entirely subdued and the red predominating; and, in fact, were alexandrites, a gem which had formerly been found only in Siberia, and even there of poor quality though in large crystals, a perfect gem of even one karat being a great rarity. Here, however, fine gems rarely under four karats were found, and an exceptional one weighed sixty-seven karats. They can be numbered among the most remarkable of known gems. Strange to say, among these alexandrites a few have been found which combine the characteristics of the cat's-eye and the alexandrite, and are in reality alexandrite cat's-eyes.

The demand for the cat's-eye also brought into use the supposed rare mineral crocidolite, commonly called tiger-eye, which has since been found to occur extensively in the Asbestos mountains, forty miles north of the Vaal River. It occurs in a ferruginous porcelain jasper, in veins from half an inch to four inches in thickness, and was first brought to Europe by Le Valliant, a French traveler in South Africa. Value has, more especially, attached to that variety which has been altered to a quartz cat's-eye. In this stone an infiltration of silicious material coated each fibre with quartz or chalcedony, giving it the hardness of the quartz and amethyst—seven in the scale of hardness. This pleasing stone readily sold for six dollars a karat, and at the outset even more; but owing to the excessive competition of two rival dealers, who sent whole cargoes of it to the London market, the price fell to one dollar, or even to twenty-five cents per pound, by the quantity. Even table-tops have been made of this material by veneering, and vases, cane heads, paper weights, seals, charms, etc., made of it have sold in large quantities. Burned, it assumed a bronze-like luster, and by dissolving out the brown oxide of iron coloring, an almost white substance was obtained, which was dyed by allowing it to absorb red, green and brown colored solutions, which, owing to the delicacy of the fibres, were evenly absorbed.

Ten years ago this material was practically unknown, but so extensively has it been sold, that to-day it is to be found on every tourists' stand, whether at the Rigi, on Pike's Peak, in Florida, at Los Angeles, or at Nijni Novgorod, showing how thoroughly organized is the system of distribution in the gem market. Missionaries have never spread a religion so rapidly as traders have disseminated this form of the "cat's-eye."

Since it has become generally known that Queen Victoria is partial to the opal, the old and stubborn superstition concerning it, which is said to date from Scott's Anne of Geierstein, has been slowly yielding, until now the gem has its share of popular favor. During the last two years ten times as many opals have been imported as were brought here during the preceding decade, many of these being the finest Hungarian stones. Mexican fire-opals are much more common, as tourists know to their sorrow, who buy them at exorbitant prices in Mexico, hoping thus to pay the expenses of the trip, only to find, on reaching New York, that the opals are worth only about a quarter of what they paid for them.

The Mexican opal mines are near Queretara, and it is believed that a demand of 50,000 stones per annum could be supplied without raising the price perceptibly, since in the market of precious stones the demand generally raises the price. The opal mines of Dubreck, Hungary, yield the government a revenue of \$6,000 annually. And

the output is so carefully regulated by the lessees that the market is never glutted.

About ten years ago a new and very interesting variety of opal was brought from the Baricoo River, Queensland, Australia, where it was found in a highly ferruginous jasper-like matrix, sometimes apparently as a nodule and then again in brilliant colored patches or in specks affording a sharp contrast with reddish brown matrix, which admits of a high polish and breaks with a conchoidal fracture. Many of these stones are exceedingly brilliant. They are of the variety known as harlequin opals, their color being somewhat yellow as compared with the Hungarian stone, although not less brilliant. The rich ultramarine blue opal is quite peculiar to this locality, and many have a rich green tint that makes them almost transcend the Hungarian opals.

A company capitalized at £200,000 has been formed, and the gems are soon likely to be extensively mined. Many curious little cameo-like objects, such as faces, dogs, heads and the like, are made by cutting the matrix and the opal together.

Never have pearls been more popular or commanded such high prices as during the last ten years. At present nothing is considered in better taste than the pearl, on account of its purity and subdued beauty. This unusual demand has had the effect of greatly stimulating the search for them, especially on the west coast of Australia, at Thursday Island, the Sooloo Archipelago, in Ceylon and the Persian Gulf, and also along the coast of Lower California. The demand included pearls of all colors except the inferior yellow. The fine black pearls from Lower California have been in great request, single ones bringing as much as \$8,000. With these black pearls are found many beautiful gray and grayish brown pearls. The different fisheries of the world produce fully \$1,000,000 worth annually, of which the Lower California fisheries produce probably one-sixth. Kentucky, Tennessee and Texas have given us over \$10,000 worth of pearls per annum; their remarkable fresh water pearls, especially the pink ones, which are unrivalled for delicacy of tint. The finding of two bushels of these in the Turner group of mounds in the Little Miami Valley, Ohio, by Prof. F. W. Putnam, gives us a faint idea of how plentiful they were before the arrival of the Europeans. But within the last five years many of the fancy colored pearls have received their variety of color, not from nature, but by artificial means.

The acquisition of the Burmese ruby mines cost the British Government a vast sum of money. On the wars of 1826 and 1852 England expended \$75,000,000 and \$15,000,000 respectively, and after all this sacrifice of treasure the Burmah and Bombay Trading Company claimed, four years ago, that King Thebaw, of Burmah, had arbitrarily canceled the leases by which the company controlled the output of the ruby mines near Mandalay. A meeting was accordingly held at Rangoon, October 11, 1884, presided over by J. Thompson, agent for Gillanders, Arbuthnot & Company (a firm of which Gladstone's son is said to be a partner), with a view to securing the lease of the mines. They did not succeed, however, and the war of 1886 which followed involved the raising of an army of 30,000 men and an outlay of \$5,000,000, but the British Government finally gained control of the long-coveted ruby mines. The question which next presented itself was how should they be worked? Several firms were desirous of securing the lease, and after the Indian Government had virtually closed a lease to Messrs. Streeter & Company, the London jewelers, at an annual rental of 4 lakhs of rupees (£40,000), for a term of five and one-half years, with the privilege of collecting thirty per cent. on all stones mined by others, for some unexplained reason, but probably on account of trade jealousies, the home government revoked the lease, although Mr. Streeter had apparently every assurance of the acceptance of his proposition, and had even made preparations to begin work at the mines.

The ruby mines of Burmah are situated in the valley of the Mogok, fifty-one miles from the bank of the Irrawaddy River and about seventy-five miles north of Mandalay, at an altitude of 4,200 feet.

Very little has been known concerning them up to the present, as they were always the monopoly of the crown and were jealously guarded. It was said that they paid King Thebaw's government 100,000 rupees per annum, and one year, 150,000 rupees. Mining is carried on there by forty or fifty wealthy natives, who employ the poorer townspeople at liberal wages; but at present only seventy-eight mines or diggings are in operation, and they are worked in the most primitive manner. All of the gems are sent to Ruby Hall, Mandalay, to be valued. At present the royalty exacted by the English Government is thirty per cent. A stone was lately sold in Mandalay for 8,000 rupees, but without the knowledge of the officials. In the valley a number of pagodas have been erected by wealthy ruby miners as votive offerings for their success.

One thing, at least, we learned from the British occupation of Burmah; namely, that King Thebaw did not own the dishes of rubies which were said to outrival anything in history. His possessions of this sort were found to consist only of a few stones of poor quality.

The diamond mines at Salabro, Brazil, known as the Canavieiras, were discovered in 1882 by a poor miner who had worked in the earlier mines. They are situated two days' journey from Canavieiras, near the river Pardo, and the gems, which are found in a red gravel at a depth of about two feet, are very fine in quality, and are remarkable for their purity and whiteness, the crystals being of such a form that scarcely any cleaving is necessary.

History repeats itself, and as, when the Brazilian mines were first discovered, the stones were sent to Europe by way of India to enter the markets in India wrappers, so Bultfontein diamonds were sent to Canavieiras to be shipped to Europe as the product of that mine. So great was the rush for these mines at first, that, notwithstanding the rumors of a malarial climate and epidemic diseases, by the end of the first year 3,000 miners were at work where shortly before was a virgin forest, and for a time even this number was exceeded. The other Brazilian mines have been only slightly worked of late years.

India, Borneo and Australia are now yielding very few diamonds, probably not more than one per cent. of the entire product. These three countries, together with Brazil, yield probably less than ten per cent. of the total output.

The recent combination of the diamond mining companies in South Africa to regulate the production and price, has led to a feverish speculation in diamond shares and awakened interest in the mines of Brazil and India. During the past month the Madras Presidency Diamond Fields Company, Limited, has been organizing with a capital stock of £190,000, and to prove that the Indian mines are not yet exhausted, it is announced that operations will soon be commenced at Wadjra Karur Fields in the Madras Presidency. On this field of 554 acres was found a very fine sixty-seven and a half karat diamond crystal, which furnished a twenty-five karat stone called the Gor do-Norr, valued by the company at £15,000.

Another English company has recently been formed under the name of the "Hyderabad Deccan Mining Company," to work the mines in the valley of Krishna in India, where it is thought that the famous Koh-i-noor diamond was found.

In 1878 the importations of uncut diamonds amounted to \$63,270; in 1887 to \$262,357; while in 1883 there were imported \$443,996 worth, showing that although we are cutting four times as many diamonds as we were in 1878, yet the importations have been falling off. This is partly because in the years from 1882 to 1885 a number of our jewelers opened diamond cutting establishments, but have either given up the business or sold out to others; for in spite of the protective duty of ten per cent. on cut stones, cutting can only be profitably carried on here on a scale large enough to enable one of the partners to reside in London, the great market for rough diamonds, to take advantage of every fluctuation of the market, and purchase large parcels which can be cut immediately and converted

into cash; for nothing is bought and sold on a closer margin than rough diamonds.

There are at present about twelve cutting establishments in this country employing from one to fifty men each, and in all about one hundred, at salaries ranging from twenty to fifty dollars per week. Most of the cutting done here is of a high class, some shops being almost entirely employed in re-cutting stones that had been cut abroad. Ten years ago nearly all the diamonds used in the United States were purchased through brokers or importers. To-day, owing to the marvelous growth of the diamond business here and the facilities for transatlantic travel, many of the large retail houses buy their diamonds direct in the European markets, and some have even established branches or agencies abroad.

The De Beers' Diamond Mine Disaster.

GEORGE F. KUNZ.



THE DISASTER at De Beers' mine in the South African diamond fields, by which 24 whites and 200 natives perished, as reported in cable dispatches from Cape Town, via London, took place on the night of Wednesday, July 11.

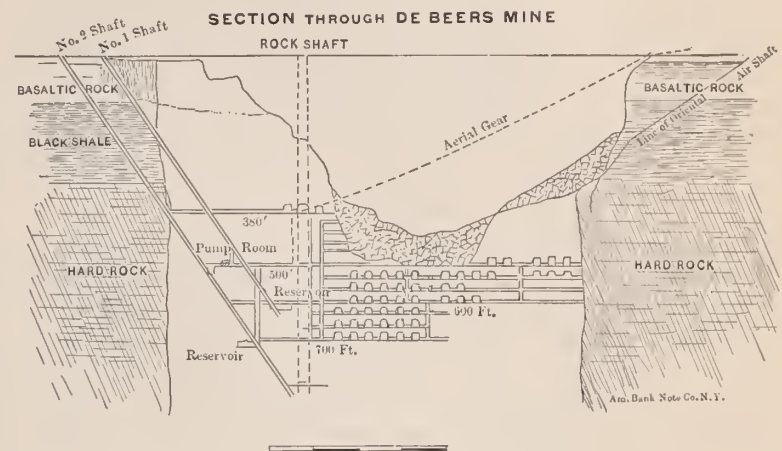
According to the first report of the terrible calamity, it was that "The De Beers' coal mines at Kimberley" had caught fire. The manifest error in regard to the character of the mine was not corrected in subsequent dispatches, but the cause of the fatal fire was explained in this way: "While the shifts were being changed the hauling wire broke and the skip rushed down the wire with frightful rapidity. The oil lamps were broken, and the blazing fluid quickly ignited the wooden casing of the shaft. Flames in great volume

£58 per annum. Formerly the natives were allowed to leave the mines, but owing to the fraudulent traffic carried on 2,300 of them were last year compounded. That is, they practically lived in the mines but were better off than those who had their freedom. They are housed, clothed and fed in barracks provided by the company. The term of contract generally is from one to two months.

The mine is situated in Griqualand West, now a part of Cape Colony, in latitude $28^{\circ} 40'$, longitude $25^{\circ} 10'$ East, about 640 miles northeast of Cape Town and 500 miles from the sea coast. Although it is at an elevation of nearly 4,000 feet above the sea level, the heat is excessive during the summer months, when the work is principally carried on.

The mine covers $13\frac{1}{2}$ acres of 610 claims, each 31 feet square, with a roadway of 15 feet between each claim.

The old system of open workings has been, to a great extent, abandoned for the shaft and underground plan. Under the original

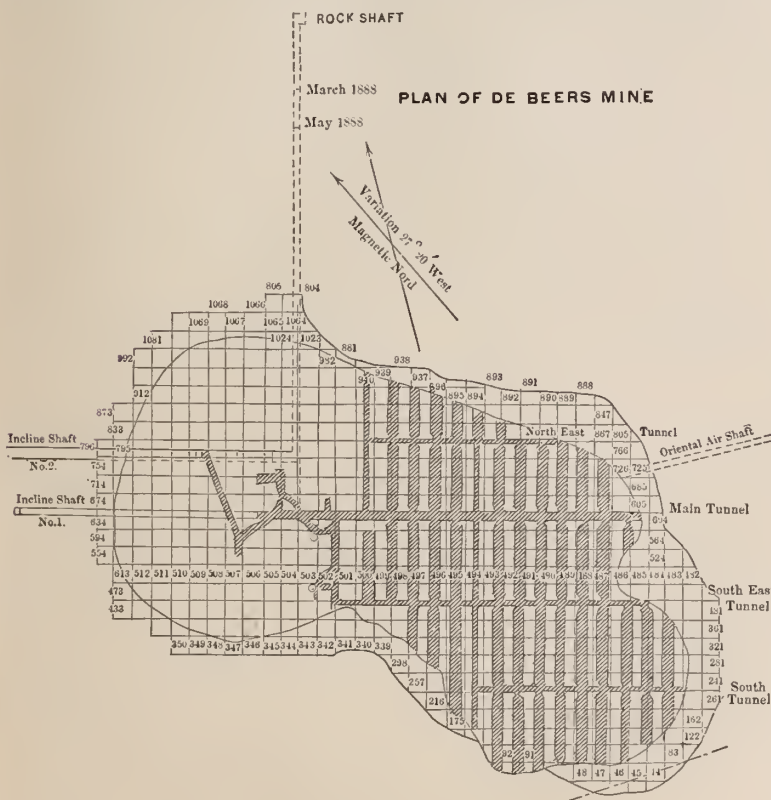


method the excavations were carried on to a depth of 500 feet. There were many accidents owing to the falling shale or reef. A rock shaft is now completed to a depth of 841 feet, and taps the lower levels. During last year over 621 feet of main tunnel were driven. There is one shaft of 791 feet, another of 477 feet, and a third of 125 feet. As many as 18 tribes of natives have been represented in the mines. Some of the natives have been known to tramp a thousand miles to reach the mines, often dying on the way or immediately after arriving there.

The Superintendent of the De Beers' mine is Mr. Gardner P. Williams, of Oakland, Cal. He went to South Africa on his second trip in the latter part of 1886, and under his efficient management the mine has been rapidly and systematically developed, so that last year the output was the greatest in the history of the mine.

The year from May 1, 1887, to May, 1888, 890,000 loads of "blue stuff," as the rock is called, were hauled out of the mines, and 850,906 loads yielded 979,732½ karats of diamonds, for which the company received £984,085, 14s. 6d. The actual expenditure was £415,188, leaving a profit of £568,897. The De Beers' mine is capitalized at £2,500,620 in ten pound shares. These were quoted as high as £52 last month, and since have slumped to £30 and advanced again to £39. This mine now also controls the Central Diamond Mining Co. of the Kimberley mine. It is possible that the recent accident will cause another decline in shares. From September 1, 1882, to December 31, 1887, the De Beers' mine yielded 344,015 karats, valued at £3,450,338, an average of £1 ½d. per karat. This includes everything taken from the mine. In the beginning the mine produced only 4-10 karat per load, but as the mining has been carried on at greater depths the yield has been larger. Last year the yield was 8-10 karat per load, a significant increase.

Water flows from the mine at the rate of 5,500 gallons per hour, and at the rate of 1,200 gallons from the rock shaft. There are nine big washing machines in use, which are more reliable than the hand or eye. They are so accurate that a diamond the size of a pin head cannot escape.



shot up the shaft, completely preventing egress. The mine was soon filled with smoke, and the lights carried by the miners were rendered useless. The panic-stricken natives and whites, in their efforts to escape, became massed together in the galleries and were suffocated to death."

According to the latest official reports, May, 1888, there were employed in the De Beers' mine 394 whites and 2,758 natives. Of the latter 300 were convicts, hired from the government at a cost of



STEADY PINS.—Two steady pins, well adjusted, are quite sufficient, and much better than pins made in the common, careless way, with which a bridge often goes on rather hard at the beginning, and allows some shake when close to the plate. The steady pins ought not to be too long, for if they are they bend too easily. The length must not exceed double their thickness, and the pin wire must be drawn as hard as possible. To be effective, they must stand as far apart as the foot of the bridge will allow.

DIAMANTINE.—The use of diamantine for polishing surfaces that perform rubbing motions, such as the lifting faces of the teeth, of cylinder, and the largest pivots in watches, should be discountenanced. It is true, diamantine makes a very handsome black polish, but no confidence can be placed in the polishing agent; on account of its great hardness, particles of it will enter into the steel, and be retained in it, and when the watch commences to go, it may be expected that the surface charged with the diamantine will quickly wear out the jewel hole or metal in which it works.

REVAMPING A MARBLE CASE.—A little shine on an old thing sometimes helps amazingly. The repairer is occasionally called on to expend his ingenuity on a marble clock case, and he can give it a handsome polish in the following manner: Take ordinary yellow beeswax, and dissolve it with turpentine into a paste; then take a fine and very soft rag, place in the middle a round lump of wadding fold the rag over it and tie it together right above the wadding. Upon this take a little of the wax paste, and polish with it. Finally rub the case down with a soft chamois.

WOODEN PENDULUMS.—If clock consumers only knew they would invariably prefer clocks with wooden pendulum rod. Best for this purpose is old, well seasoned fir-wood, of one year's growth; saw it apart lengthwise, and glue the two pieces together again in such a manner that the veins run in opposite directions. When varnishing it, it is advisable to dip it slowly endwise into the varnish, so as to gradually expel the air; if this job is done hastily, the air will be left in the wood to be acted on by every change of the temperature. Such a pendulum renders services that can compare with a compensated pendulum, as wood is almost insensible to heat or cold.

THE CONDITION OF THE PIVOTS.—Little can be said of the condition of pivots in general beyond that they must be straight and polished to perform to perfection, with ends rounded spherically. The shoulders must not be too broad, and must also be straight and well polished. Only the escapement pivots of chronometers deviate from this rule. The thickness of the pivots stands in a just proportion to the construction of the watch. It need only be remarked in this connection that a thicker pivot has more friction than a weaker, because "the friction of two pivots compared with each other is proportioned as the square of their diameters." According to this, therefore, a pivot of four millimeters in diameter offers four times as much friction as another of two millimeters in diameters.

GLASS PLATES.—The glass plates used for frosting and polishing steel work on, as well as burnishing endstone settings and other brass pieces, are surfaced with emery. Perfect flatness cannot be insured in preparing only two plates, for one may be dished and the other rounding, and yet they would touch each other all over. The best plan is to get three pieces of plate glass of a convenient size, and rub them together in rotation with rather coarse emery, until a true surface is obtained. Then the plate intended for burnishing is rubbed on the other two with doubly-washed emery, and may afterwards be polished with putty powder. When in use the burnishing plates should be kept scrupulously clean with alcohol and a wash leather.

IMITATION GROUND GLASS.—Watchmakers who are forced, while working on the bench, to face dead white walls, may break the eye-fatiguing glare by making a substitute of ground glass as follows: Work together equal parts of white lead and common putty until quite soft, then form it into a ball, and roll or dab it over the surface of the glass, and a ground glass appearance is the result.

CAP JEWELS.—The employment of a diamond as a cap jewel to the upper balance pivot is a very good practice, because the watch, in its horizontal position, performs with almost all the friction on the pivot end, and the extreme hardness and fine polish of the diamond face will reduce the wear and tear of friction to their smallest amount. It only requires some care to select the diamond, because among those which can be bought at the material dealer's there are sometimes pieces defective in point of polish, and in this case, in place of preserving the pivot, they might prove the means of its destruction.

TO ENLARGE A DIAL HOLE.—It is quite a delicate job to enlarge a dial hole with a rat tail file. As an extra precaution the contour of the hole on either side may be coned with a spindle, so as to reduce the thickness of the enamel to be acted on by the file, but a watchmaker who has had any experience can dispense with such a preliminary, which we would at the same time recommend. The file must enter the hole freely. If only the point can do this, the file must be held very short, so that the finger may come in contact with the dial before the larger diameter of the file locks in the hole, as this must almost certainly crack the enamel. Some workmen avoid such an accident by forcing on to the file a rather long cork of small diameter. With a view to avoid scratching the face of the dial in case the file is drawn out of the hole in its backward movement, it is well to round off and polish its point. During the forward movement a slight circular motion is given to the file, and, in returning, no pressure is to be applied; the file must merely slide over the surface. It is dipped from time to time in a liquid made from turpentine 62 parts by weight, oxotate of potassium 4 parts by weight, and camphor 4 parts by weight. The two latter substances are reduced to powder and dissolved in the turpentine, and 2 parts by weight of sandalwood may be added. When the hole is large enough, a conical spindle should be used to smooth its edges.

TO TEMPER STEEL TOOLS so as to cut the hardest parts we have to contend with in watch repairing, all that is necessary is to heat to a cherry red, and plunge in mercurial ointment (quicksilver and lard thoroughly mixed). It gives a remarkable degree of hardness, and is still tough and elastic to an extent not attained in any other way.

RACKING LEVERS AND TANGLED HAIRSPRINGS.—Mr. D. C. Beckham gives the following excellent advice, in a contemporary, to an interrogatory about racking levers and tangled balance springs. He says that every watchmaker and repairer understands the annoyance of the adjustment of the toothed or racking levers and tangled balance springs, and as he has had quite a fair experience in this line, he recommends the following simple and easy remedy: First, take the lever. We all know how troublesome it is to one not thoroughly understanding it. The trouble is caused by not being able to get staff set exactly in the center of the rake on the fork, while it and the balance are at rest, which must be very exact for the watch to give good results. After cleaning your watch put it up and turn on one or two rounds with your key; now move your fork carefully to the right until it escapes (clicks); mark on the edge of the plate where it points, and then move it to the left and mark again. Now fasten it just half-way between the two dots with a thin piece of pith; hold the balance over the jewel hole and let it come to rest and drop it in. Put on your bridge, take out your wedge, and your watch is in beat. When a balance spring gets tangled, stick a fine needle through the inner coil, close to the collet, firmly into the bench; catch hold with your tweezers and pull slowly around until it is brought out at the end of the outer coil.



—Among the dealers in town during last month, we notice the following: John Frear, Binghampton, N. Y.; J. Block, J. W. Weil, Buffalo, N. Y.; H. F. Hahn, O. W. Wallis, C. H. Knights, M. C. Eppenstein, A. Hirsch, R. A. Kettle, Benj. Allen, Chicago, Ill.; L. Strauss, A. Herman, A. Plaut, A. G. Schwab, J. H. Voss, W. H. Moore, Cincinnati, O.; J. M. Chandler, W. L. Bowler, Cleveland, O.; I. M. Kallmeyer, H. M. Wright, Detroit, Mich.; A. LaFrance, Elmira, N. Y.; A. Preusser, Grand Rapids, Mich.; A. Levy, Hamilton, Quebec; W. Gibbs, Helena, Montana; M. A. Deimel, Herkimer, N. Y.; H. Oppenheimer, Kansas City, Mo.; T. R. J. Ayres, Keokuk, Ia.; J. D. Cowan, Knoxville, Tenn.; Ernest Zahm, Lancaster, Pa.; E. Lamson, Lowell, Mass.; J. R. Harper, H. Hodgson, Montreal, Quebec; Wm. F. Nye, New Bedford, Mass.; L. Dreyfus, A. M. Hill, New Orleans, La.; J. A. Martin, Paris, Texas; J. O. Slemmons, J. H. Wattles, G. E. Goddard, I. Ollendorff, G. W. Dilworth, J. R. Reed, Pittsburgh, Pa.; Wm. Reed, Plattsburgh, N. Y.; J. H. Tyler, J. Kohler, Richmond, Va.; A. Eisenberg, C. Hadenfeldt, San Francisco, Cal.; Joseph Mayer, Shamokin, Pa.; R. L. Macdonald, St. Joseph, Mo.; T. McCarthy, G. E. Wilkins, C. Hawley, D. N. Lathrop, Syracuse, N. Y.; E. C. Shaw, Toledo, O.; W. A. Young, G. Chillas, W. Barr, W. G. Lowe, M. C. Ellis, Harry Ellis, Toronto, Ont.; T. F. Timpane, J. H. Tappin, Troy, N. Y.

—Among the dealers who have sailed for Europe since our last issue, we note: F. H. Mulford, Louis Bonet, Herbert Cockshaw, L. Tannenbaum, Max Freund, L. S. Stowe, of Springfield, Mass.; Philip Bissinger, William Smith, H. Semken, Washington, D. C., D. De Sola Mendes, L. F. Brooks, of Brooks & Pike, Boston, N. S. Ripley, of Ripley-Howland Mfg. Co., Boston, John D. Alling, of Alling & Co., George Carlton Comstock, of the Board of Trade, Benj. Allen, of Chicago, Ill., G. H. Ford, New Haven, Conn.

—Among the dealers who have arrived from Europe since our last issue, we note: R. N. Peterson, Gorham Thurber, Providence, R. I., Rud. C. Hahn, George S. Wickham, A. W. Berger, A. J. Grinberg, J. H. Wattles, of Pittsburgh, F. Kroeber, M. Falkenau, D. Valentine, Mr. Walker, of Albert Berger & Co., E. Harris, of Harris & Shafer, Washington, D. C., S. H. Levy, of L. & M. Kahn & Co., J. F. Fradley, Henry Zimmern, H. M. Wright, of Wright, Kay & Co., Detroit, Mich., A. Stowell, Boston, Mass., August Becker, T. Le Boutillier, J. T. Bailey and C. Weaver, of Bailey, Banks & Biddle, Philadelphia, Pa.

—Mr. Henry Aldred, Au Sable, Mich., has opened a branch store at West Branch, Mich.

—S. K. Merrill & Co., Pawtuxet, R. I., are now in full operation in their new factory in the building recently erected by C. J. Bloomer.

—Eastwood & Park is a new manufacturing jewelry firm recently started in Newark, N. J. The partners are both young men, and were formerly with Hayes Bros. for eleven years.

—The handsome illustrated book, entitled "Old Plate," from which an extract appears in this issue, can be obtained of The Jewelers' Circular Publishing Co. for the publisher's price, \$5.

—Mr. W. P. Gough, with Carter, Sloan & Co., recently made a trip to England where he was married to an English lady. The couple made a trip on the continent, after which they came to New York.

—The death is announced of the youngest son of John W. Miles, of the Meriden Britannia Company. He died of diphtheria at Ramapo, N. J., July 19, aged five years and four months. A large circle of friends will sympathize keenly with the afflicted parents.

—The Middletown Plate Company's New York office, No. 22 John street, is a good place just now to see a fine line of new things in silver plated ware for the fall. This company keeps up to the times in the matter of novelties, and their designs are hard to improve upon.

—W. E. White & Co. recently began to manufacture a few articles in solid gold. Their line had hitherto contained only plated jewelry, and when they introduced their solid gold scarf pins they met with such a great success that they were surprised. The patterns are neat and attractive.

—Hutchison & Huestis report a large demand for gold rings of their make. Their line this season includes a great variety of new patterns for ladies and gentlemen. The rings of this make are well known to the retail trade, and jobbers will do well to lay in a line of them. The new patterns go ahead of anything yet produced by this house.

—Rogers & Brother are prepared this month to show their customers a line of new patterns in their famous make of silver plated ware, in addition to their staple goods. The new patterns are unique and very tasteful, and as they are made exclusively in the Rogers & Bro. brand, the line should be seen by buyers before laying in stock for the fall.

—James Allan & Co., of Charleston, S. C., are altering and enlarging their building. An extension of 100 feet has been added to the store, and the ceiling has been made higher. It is proposed to remodel the entire building, which will be fitted with every improvement and be an entirely modern structure. It is expected it will be the finest store in Charleston.

—A small package was received at the Post Office, July 22d, from Europe, addressed to S. Misrali, and was marked to be called for. The package looked suspicious and a custom-house inspector who was on hand when Misrali called for the package compelled the man to open it in his presence. It contained fifty diamonds, valued at \$8,000. The man and package were seized and taken into custody.

—Mr. John Fest, a Philadelphia jeweler, died recently at Atlantic city, N. J., in his 69th year. For a long time he was engaged in business on Second street, near Green, in Philadelphia, but retired seventeen years ago. He studied elocution under Leonard G. White, and appeared in a number of Shakspearian characters at the theatre. He afterwards made a successful tour through the country and was well received.

—A large fire in Elmira, N. Y., on July 5th, in which a whole block of business houses was destroyed, damaged the stock of Mr. E. H. Ayres to a considerable amount. He carried an insurance of \$8,000 on a stock valued at near \$15,000, but much of the stock was saved during the progress of the fire. Some of the first things saved were a lot of watches and odd jewelry left for repairs. Mr. Ayres' store was said to have been the finest in that locality.

—At a meeting of the directors of the Keystone Standard Watch Co., Lancaster, Pa., July 14th, it was voted not to close their factory during the summer for vacation. This action was necessary on account of the company being so far behind on orders for high grade movements. Since the present management have had the control of the company, now about 3 years, the Keystone Standard Co. has not closed its factory except for necessary repairs, and then not longer than a day at a time.

For a Fourth of July advertisement, the enterprising firm of Howard & Son, the firm of original ideas and ever growing success, sent out to their customers a handsome silk banner of the Stars and Stripes. It was enclosed in a rocket and wrapped in a neatly printed circular containing an advertisement and a patriotic sentiment. The beautiful flag is mounted on a stick to which is attached a white silk ribbon with the "American Lever" trade mark printed upon it in blue. The whole is a thing of beauty and certainly a novelty in the advertising line.

—Crouch & Fitzgerald have just succeeded in producing their lightest weight trunk for travelers.

—C. G. Bloomer & Sons, Pawtuxet, R. I., have been succeeded by the firm of C. G. Bloomer's Sons.

—The Waterbury Clock Co., among its many new styles of clocks for the fall, shows one with a barometer and thermometer combined.

—Frank M. Whiting & Co., makers of sterling silverware, silver jewelry, etc., show a complete line of their samples at their New York office at Seventeenth street, corner of Broadway.

—"This is mid-winter in Africa and the weather is bitterly cold." Thus writes our special correspondent at Kimberley on June 11. His letter will be found in another part of this paper.

—The Meriden Britannia Co. has a handsome exhibit of novelties in silver plate for the fall. Their beautiful store on Union Square is full of one of the most beautiful lines in the city.

—The Crescent Gold Filled Watch Cases are represented in this issue by a half dozen illustrations. These goods are well known to the trade, and their merits are clearly explained to the consumer.

—Mr. Henry Abbott shows in this issue his picture of the famous blizzard. It is a cooling and refreshing thing to contemplate in this hot weather, and we advise our readers to turn hastily to that spot.

—The Hampden Watch Co. have closed down about one-third of their factory at Springfield, Mass., which will start up again in Canton about August. 6. Another portion closed down July 27, and the remainder will run till nearly the tenth of August.

—Attention is called to the "Rococo" pattern in sterling silver, shown in the advertisement of Mr. George W. Shiebler. Mr. Shiebler's establishment turns out some extremely fine pieces of silverware, and his success in this line can be attributed to the artistic finish and the skill shown in his wares.

Mr. J. F. Courvoisier, of Port Jervis, N. Y., illustrates in this issue a novelty in the line of watch cases on which he has a patent. The case is a combination watch case and locket, and it is practical and simple. Out of town dealers can have a sample sent to them for inspection by applying to Mr. Courvoisier.

—Carter, Sloan & Co. show a large variety of new patterns in jewelry for the fall, which really must be seen to be appreciated. But the character of their goods needs no words to uphold them in the estimation of the majority of the trade. The advertisement of this firm mentions a few of their list of novelties.

—Simpson, Hall, Miller & Co. are ready for their fall customers, some of whom have already made their appearance in the city. Their new goods are well worth seeing by those interested, as they include some very original designs. The line is also very complete, and includes hollow and flat wares of all description.

—A meeting of the stockholders of the Non-Magnetic Watch Company of America, was held at the company's office, Yonkers, N. Y., on July 27, for the purpose of increasing the capital stock of the company from \$500,000 to \$700,000, by the issue of ten thousand shares of preferred stock, or of such lesser number of shares as might be agreed upon.

—Fred. I. Marcy & Co.'s "Sensible" collar button is meeting with the success it deserves. This improved style of button is easy of insertion, and it holds the scarf in the position where it belongs. Those who have noted the fact that swear words and violent language are becoming less used, can safely attribute it to the use of this button.

—Mr. J. H. Johnston's branch store on Union Square far outshines in elegance his old established place on the Bowery. B. & W. B. Smith fitted up the new place, and they have certainly added another success to their great many successes in the jewelry trade all over the country. Messrs. Smith deserve credit for the artistic appearance of the store, but Mr. Johnston certainly makes an elegant and tasty display of jewelry in the show windows and cases.

—An average of one-and-a-tenth members have joined The Jewelers' and Tradesmen's Company every day since its organization. This includes Sundays. It is a fine showing, but when its merits are better understood its membership will include the majority of important men in the trade.

The Wiesbauer Mfg. Co., of Buffalo, make a very complete line of jewelers' finding, paper boxes and cases for jewelry, silverware, etc., in plush, leather, velvet and wood. They have already become well known to the trade through the introduction of their "Niagara Falls" chromo paper boxes. Their establishment in Buffalo is well fitted to produce goods in large quantities.

—Mr. Ferdinand J. Herpers, Sr., died at his home in Newark on July 21. He was sixty nine years of age and was born in Rhenish Prussia. He came to America in 1845, and secured employment at various times with several noted jewelry houses as a workman in their factories. He was the first one in this country to start a factory for the manufacture of stone settings exclusively.

—Mr. Edwin A. Thrall is constantly receiving from Europe fresh invoices of diamonds and precious stones especially selected for his trade. Mr. Thrall is known to import many gems of the finest quality, and his new importations should be seen early.

—We announce with regret the death of the wife of Mr. L. F. Munger, of Rochester, N. Y., in her sixty-fifth year.

—Attention is called to the artistic advertisement of the Gorham Mfg. Co. in this issue. Everything that this firm does seems to turn out successfully, and all of their productions are works of art. Their handsome building at Nineteenth street and Broadway is just now undergoing some alterations, without, however, interfering with their extensive summer trade. The alterations are in certain show rooms which will presently be arranged in the good taste for which the managers of this firm are known.

—The London office of Alfred H. Smith & Co., diamond importers, at 33 Holborn Viaduct, has this year been looked after by Mr. Harrison Smith, who, after a year's absence, will return in the autumn for a brief stay in America. The continuous sojourn and careful attention given by Mr. Smith to his purchases for the New York and Chicago offices of his house has resulted in the extreme excellency of cutting and finish for which their goods are justly noted. In giving permanent satisfaction to their customers, retail dealers find that almost everything depends on the perfection of the cutting of the diamonds they sell.

—The repairs and alterations on the Dennison Manufacturing Company's Building, 198 Broadway, have been entirely completed, and the appearance of the place is very much improved. The stock room and shipping departments have been made larger and the salesroom, too, looks roomier and lighter. The upper floors of the building have been fitted up for offices, with every convenience that modern improvement can suggest; quick running elevator, steam heater, electric light, etc. The whole place is well ventilated and the light is good. Any firm in the trade who intend establishing an office in New York city, ought to see these offices before they make a choice.

—Mr. Gilbert T. Woglom, the well known manufacturer of onyx goods, the originator of many schemes and ideas which have benefited the trade at different times, has in his office a little thing so useful that we describe it for the benefit of any firms which send out travelers. It is not patented, we believe. The thing consists of an oblong-shaped cushion covered with baize, from one end of which is a draping of the same material. A traveler's trunk by itself is not a very pretty looking affair when exposed to view in a jewelry office, but when covered with one of these cushions, it has the appearance of a fifty dollar settee, and two or three trunks arranged in a row along the wall, covered in this manner, make a fine-appearing piece of furniture, and we recommend the disposal of traveler's trunks in this way. The cushions are inexpensive and in dull times are very comfortable lounges to rest on, etc.

—Campaign badges are now being made in larger quantities and in a greater variety of patterns than ever before.

—The Manhattan Watch Co. have been getting out some new patterns of their famous low priced watch, which they are now showing to the trade.

—The Trenton Watch Company announce that they have withdrawn from the Jobbers' Association and that they will sell their watches directly to the retail trade. They report business good among the retailers.

—The Chamber of Commerce of Rochester, N. Y., has sent a Mr. Max Gutman as a committee of one to New York and other cities, to collect information relating to the cost and desirability of establishing a watch factory in Rochester.

—Owing to his absence from the city during the past month, Mr. Charles S. Crossman was unable to furnish his customary contribution on the History of Watch and Clock Making. His next article will appear in our September issue.

—Mr. Stern, of the house of Stern & Stern, was greatly interested in the eclipse of the moon on the 22d of July. The "Eclipse" is the trade mark of his house, and the latest eclipse was a remarkably fine one from this section of the country.

—Obediah Rich, formerly a well known jeweler in Boston, died recently at Mount Pleasant, S. C., aged seventy-nine. For the last fifteen years he was a member of the firm of Bocket & Crosby, Boston, before which time he was in business for himself as a silversmith.

—Foster & Bailey, in addition to their famous "Mount Hope" sleeve button, in which they show some new patterns, are in the market with a better line than ever with new locket, lace pins, hair mountings. They also show a very pretty initial scarf pin and a campaign scarf pin.

—Baker & Wardin, Topeka, Kansas, have gone out of business, and their stock has been advertised to be sold at auction by Mr. J. H. French, the auctioneer. A report says that they were pressed hard by their creditors, but it is expected the stock will bring enough to more than cover all claims.

—The Canadian Association of Jobbers held an important meeting July 13th, at which several gentlemen were present representing watch and watch case companies in the United States. The trade lists were revised, the prices of all watches being reduced. Gold watch cases were brought within the rules of the association, and the product of the Montreal Watch Case Co. were put upon the list.

—Experiments made in Newport, Ky., a few days since, are reported to have demonstrated that aluminum which now costs \$20,000 a ton, and is produced only in France, can be obtained anywhere by a most simple process and at less than a hundredth of present cost. The discovery resulted from a successful attempt to extract aluminum chemically from common clay and cryolite.—*Progressive Age*.

—The Chicago *Journal of Commerce* states that three newsboys of that city, guilty of no misdemeanor, were arrested last week at their request and sent to Bridewell. Their reason for wanting to go there, as stated by the police justice, was that they wanted to learn a trade. Under the laws of the trades unions there is almost no chance for the American boy to learn a trade in any shop or manufactory outside of a house of correction.

—Dennis Murnane, who for almost twenty-five years had been employed as night-watchman by Maiden Lane jewelers, died suddenly of pneumonia, on July 16th. He was familiarly called "Cap," or "old Captain," and he was known to most of the jewelers. A few years ago he retired from active duty as watchman, but his place has been ably supplied by his son, William J. Murnane. The deceased was fifty-five years of age, and was well liked. In all the time of his service not a single robbery occurred to any of the offices over which he kept watch.

—Mrs. Sophie Mathey died in Hoboken, N. J., July 8th, at the advanced age of 83 years. She was the widow of Louis Mathey, the well known watch importer and case maker, who died in 1873. She was the mother of Louis and Aguste Mathey, who continue the business established by their father more than a generation ago at 28 Gold street, near John street, where the sons were born. Mrs. Mathey died at the old homestead in Hoboken. She was a most lovable woman, intelligent and bright, and retained her activity and all her faculties to the last.

—Mr. Herman Wiesfield, a diamond broker, has absconded, after having secured several thousands of dollars worth of goods from several diamond houses. A few years ago this man swindled some diamond firms in the same manner and fled to South Africa, from whence he went to London on account of being stricken with a plague at Kimberley. After some correspondence with a diamond house in New York, Wiesfield came again to this city seemingly repentant and promising to be honest. He got goods on memorandum from several houses to sell, as a broker, and afterwards again became dishonest. His propensity was gambling. It is supposed he has gone to Europe.

—Thimbles seem to be such a staple article that the variation of the demand cannot be very great. The demand for thimbles made of gold and silver is steadily on the increase, however, and it seems that thimbles of the baser metals have had their day. Silver thimbles are now sold for such low prices that the poorest sewing woman can have one. A very fair weight of thimble can now be bought at any jewelry store for twenty-five cents, and this price includes the engraving of the initials of the purchaser. Gold thimbles are also made and sold in greater quantities. Nearly every jeweler carries a stock of them. They can be bought for from two dollars up, and very many are sold ranging in price over five dollars.

—Ketcham & McDougall have just put on the market a few new patterns of gold thimbles. The engravings are beautifully done, and the new patterns add much to an assortment picked from their stock. The large and almost exclusive business in thimbles done by this house, makes them one of the leaders in this branch of the trade, and their growing success with the retail trade is an evidence of their honest dealing. The quality of their goods is established, and their name as the manufacturers is a sufficient guarantee to the character of the goods not only in quality but in finish and workmanship. This house also makes a very good collar button, and the famous automatic eye-glass holder. Their advertisement appears in another part of this issue.

—Day & Clark, the well known manufacturers of fine gold jewelry recently gave their employees an outing. A special train was hired which conveyed the party to Greenwood Lake. The party consisted of about ninety persons, and included the members of the firm, the factory employees and some friends, and all but two clerks at the office. A fine dinner was served at the lake, and the party had a very merry time. The members of the firm are very popular with their work people, and this occasion increased their popularity. Everyone had a good time, no mishaps were reported, and altogether Messrs. Day & Clark were as happy as any of the party. Their example might be copied with good effect by other firms.

—Music box dealers are preparing for an unusually large demand during the coming fall. Last year saw more houses successfully engaged in this business than at any time heretofore, and music boxes, in view of their many improvements and cheapness of price are now very popular. Most of the boxes sold now-a-days, even to the cheaper grades, have interchangeable cylinders, and are thus capable of producing an unlimited number of airs. Other improvements pertain directly to the movement and commend themselves to practical jewelers. A jewelry stock without a few musical boxes is incomplete; and the fact that so few are carried in stock by jewelry stores accounts for the other fact that the large dry goods bazaars have them on sale in large quantities.

—A hundred and thirty millions of steel pens are used annually by the people of the United States. The much greater part of them are made here and are superior to foreign-made pens.

—The largest umbrella in the world has been made in Glasgow for a king of East Africa. It can be opened and shut in the usual way, and when open is 21 feet in diameter; the staff is also 21 feet long. It is lined with cardinal red and white, has a lot of straw tassels and a border of crimson satin. The canopy itself is made of Italian straw and the top terminates in a gilded cone.

—Edison has invented a new dinner clock which talks. Instead of striking the hour it speaks it. At dinner-time a voice issues from the clock and says "dinner-time," also "1 o'clock," "2 o'clock," etc., as the case may be. Another device which he is perfecting in connection with the clock is that of a female face, which he purposes to set in the face of the clock. The lips of this figure will move at the hour, the head will bow, and the fictitious lady will say, "Good evening, ladies and gentlemen, it is bed time."

—Mr. A. J. G. Hodenpyl, of Hodenpyl & Sons, who sailed to Europe in June, is sending home some important purchases of precious stones which he has selected in the European markets. Hodenpyl & Sons are doing quite a successful business in loose stones, and manage to keep a good stock always on hand. They also continue to manufacture a fine line of jewelry including some of their specialties. In diamond mountings they keep an excellent line. They are busily engaged in getting up some new things for the fall.

—Jacot & Son, the prominent musical box dealers, will soon be represented on the road by Mr. Jacot, who will take orders for music boxes for immediate and fall delivery. The well known character of the stock carried by this house is all that is necessary to commend the samples to be shown by Mr. Jacot. The liberal preparations made by this firm for a large business next fall, have given them facilities for quicker delivery of importations, and they have also added to their line several notable improvements, exclusively their own, in the manufacture of their boxes.

—Mr. Joseph Muhr, as is probably known to all the trade, is insane and confined at present at the Bloomingdale asylum. The daily press was full of the unfortunate man's vagaries at his summer home in Long Branch and also in this city. He is suffering from an organic disease of the brain, which is therefore disordered to the extent that his insanity is quite apparent. In some matters he is entirely coherent and bright and does not show his condition. His family and friends have been greatly shocked at his condition, and much sympathy is expressed among the trade. The recent changes in his business matters, he having withdrawn from the firm of H. Muhr's Sons, and started in business alone, together with a short European tour, are said to be the probable cause of his disorder.

—A statistical person has computed that in each minute in the United States, night and day, all the year around, 24 barrels of beer have to go down 12,096 throats, and 4,830 bushels of grain have come to bin. For each minute, night and day, by the official reports for the year 1886, the United States collected \$639 and spent \$461, \$187 more than necessary. The interest on the public debt was \$96 a minute, or just exactly equal to the amount of silver mined in that time. The telephone is used 595 times, the telegraph 136 times. Of tobacco, 925 pounds are raised, and part of it has been used in making 6,673 cigars, and some of it has gone up in the smoke of 2,292 cigarettes. Every minute 600 pounds of wool grow in the country, and we have to dig 61 tons of anthracite coal and 200 tons of bituminous coal, while of pig iron we turn out 12 tons and of steel rails 3 tons. During the last minute 15 kegs of nails have been made, 12 bales of cotton from the fields, and 36 bushels of grain gone into 149 gallons of spirits, while \$66 in gold should have been dug out of the earth. In the same time the United States Mint turned out gold and silver coin to the value of \$121, and 32 acres of the public domain have been sold or given away.

—Mr. Henry Olmsted, the Secretary of the N. Y. Jewelers' Association, resigned his office recently, owing to sickness which has continued for some weeks. His resignation was accepted and Mr. Pritchard has since been acting as secretary. Mr. Olmsted's place will be filled in the fall. He has been the secretary of this association for ten years, and is well known and popular in the trade. His recent illness incapacitated him for his duties, and upon the advice of his physician he resigned. At the last meeting of the association directors, a resolution was passed complimenting the retiring secretary and testifying to his integrity and industry.

—The swindler has again entered the precincts of the trade, to show us another phase of his ever-changing methods of benefitting himself at the expense of honest business men. A man entered the store of the Spencer Optical Mfg. Co. last month, and by his versatility succeeded in allaying any suspicion until he had ordered a bill of \$1,800, and succeeded in having a pair of gold specs given him for his own use. He represented himself as from a large house in San Francisco, Murphy, Grant & Co., who contemplated opening a branch at Los Angeles. The goods were to be shipped to Los Angeles, via H. B. Claflin & Co. Inquiry at the latter house developed the fact that they had no package going to Murphy, Grant & Co., and that the western house had a New York office. Inquiry was made at this office, and the man was pronounced a fraud. He had been to a prominent shoe house, and, after leaving a large order, received a fine pair of shoes for himself without charge. The man is described as a good talker, a man about six feet high, thin features and gray moustache. He was well dressed in a suit of gray material.

—The Providence, R. I. *Telegram*, recently printed an article upon the state of the jewelry trade, from which we clip the following: "In connection with the talk on the jewelry market it will be interesting to know that seven-eighths of the plated goods made in the United States is manufactured in Providence and Attleboro. The process was discovered about a hundred ago in Providence, and one of those who learned the secret established a plant in Attleboro, and the two points have since had a practical monopoly of the enterprise. The capital invested is \$7,000,000, and \$10,000 hands are employed. Providence has 200 shops and Attleboro 100. According to the census of 1885—the latest—Providence had 169 shops. The amount paid out that year was \$801,429; the value of the raw material used was \$2,283,840; the worth of the products was \$6,991,093. This did not include the silverware industry, the value of the products of which in 1885 was \$1,082,000. The four silver shops then employed 367 hands, paid \$207,648, and used raw material to the amount of \$667,580. Since 1885 the 169 plants in this city have increased to 200, and it is a fair presumption that there has been a proportionate gain in the quantity and value of the jewelry manufactured. Now the Gorham Company alone employs over seven hundred people—more than double the number of four silver mannfactories in 1885, and its annual product is said to exceed \$2,000,000."

OUR WORKING DESIGNS.

—Our artist this month again shows some attractive and useful articles in jewelry which the manufacturer is welcome to use if he thinks fit. The lace-holder with chain and charm attached, affords a suggestion of an unlimited number of ways in which it could be worked. The earring designs are odd, and a careful workman could produce a very novel and pretty ear ornament in the pattern of the horseshoe-nail shown. The designs of sleeve-buttons are very good, and number "6" is well worth a practical trial. At the present time there are many useful, but more useless styles of sleeve-button backs in the market, and while many of them are exceedingly convenient, it still remains a fact that more sleeve-buttons of finer quality are sold with the old-fashioned back than with any other style. No. "6" is really a desirable style—simple, useful, and, unlike several of the patented backs, neat in appearance and practical. The other designs on the sheet are also worthy of careful study.

—The Pairpoint Mfg. Co., have prepared a large line of new goods in silver plated ware especially for their fall trade, and they invite inspection.

—Mr. George W. Ludwig, of Chambersburg, Pa., receives complimentary notice from the local paper on the handsome appearance of his show windows.

—Mr. Marcus A. Myers, of the firm of S. F. Myers & Co., was married at Albany, July 18th, to Miss Addie Pohly, daughter of the late Nathan Pohly, of that city. A number of the friends of Mr. Myers accompanied him to Albany for the purpose of being present at the ceremony, and at its conclusion, the happy couple started on an extended wedding tour; their tour including the Thousand Islands, Niagara Falls and the Pacific Coast.

—The shrewdness of women sometimes suffers an eclipse in ordinary affairs, but when it comes to hiding jewelry it discounts that possessed by men and still has points to spare. Take, for instance, the case of the St. Paul woman who has more diamonds than she can wear with comfort at any one time. She puts the stones in a box, puts the box in a rag-bag, puts the rag-bag on the closet floor, and at night puts the watch-dog in the closet on top of the rag-bag, locks him in there, and every night hides the key in a different place. Her husband says that if she had her way she would arm him to the teeth and put him in the closet with the dog.

—The eye-glass holder and chain shop of S. F. Merritt, at Springfield, Mass., is one of the pleasant spots in the trade where the visitor is made cordially welcome. Mr. Merritt is nearly seventy, but he is just as active as he was fifty years ago, and he is busy all the time perfecting new tools and finding out new methods to simplify and increase his growing business. His latest achievement is a plated or filled wire having no hollow core, but being solid as a bar of gold. This makes the points of his plated eye-glass holders better than those made with any other wire. Mr. Merritt is a pleasant old gentleman, and his life has been spent almost entirely in the jewelry trade. He tells many stories of his life, and his reminiscences of past events and by-gone days are very interesting.

—A partial list of the more influential members of The Jewelers' and Tradesmen's Company has been published, and can be obtained with other circulars and application blanks, by applying to the Secretary, Box 3140, N. Y. City. A glance over this list is alone a great enough incentive for others to join. Nearly every name is that of a well known business man—well known for intelligence as well as for business capacity. The other arguments upon the same printed slip merely urge the advantage of joining the company immediately, as there is still room for a few more charter members. The wonderful growth of this company is attracting widespread attention; and the merits of its system, far surpassing in many respects some other kinds of life insurance, commend this company's system to all intelligent jewelers who desire a safe, economical and thorough life insurance.

—Krementz & Co., lately received a consignment from English correspondents, of some very beautiful examples of silver porcelain, which for beauty of style, finish and coloring, cannot be surpassed by any heretofore exhibited in this country. The forms of the different articles are artistic while the coloring is apparently perfection. Among them are cameo glass scent bottles, mirror scent bottles, various examples of richly colored porcelaines in the shape of jugs, bottles, vases, cups, etc. Some of the articles are pronounced by connoisseurs to be Crown Derby ware, others Royal Worcester, but of superior finish. There are also some exquisite perfume bottles of agate glass, in which various colors are twisted and blended in a most artistic manner. These goods show the great strides that have been made of late in the production of artistic porcelaines. This consignment was sent to Krementz & Co to introduce these goods into this market, and all persons interested are invited to examine them.

—The work of building the large, new jewelers' building at the corner of John street and Broadway, is progressing rapidly. The cellars have been excavated, and soon the foundation walls will be laid. It will be almost a year before this magnificent building will be completed.

—We desire to call attention to the very beautiful and illuminated advertisement of Krementz & Co. in this issue of THE CIRCULAR. This old and well known firm have made a decided hit with their one-piece collar button, which has not only the advantage of solidity obtained from using a single piece of gold to make the entire button, thus avoiding the use of solder, but an additional advantage in the form of the perfected article, which enables the wearer to insert it or take it out of his collars and cuffs without difficulty, or breaking his finger nails and the third commandment at the same time. There has been a continuous demand for these buttons since their first introduction, and never greater than during the present season. Krementz & Co., also carry full lines of other goods, as is well known, and offer an excellent stock for buyers to select from.

—There is a society in New York City known as the New York Mineralogical Club, of which Mr. Geo. F. Kunz is the secretary and organizer. All of its members devote at least a portion of their time to the study of the mineral and rock riches of the island. Mr. B. B. Chamberlin is a prominent member of this society. Some time ago it was suggested that the club should see to it that the Chamberlin collection of minerals, as being the finest and most complete of any of the metropolitan collections, be put on public exhibition and kept from being scattered or injured. The suggestion was taken up, and Mr. Chamberlin being willing, the club applied for exhibition space in the American Museum of Natural History. The request was granted, and at a meeting of the Mineralogical Club held a few weeks ago at the residence of one of its members, Mr. B. G. Amend of 120 East 19th street, it was decided to have Mr. Chamberlin's collection removed to the museum. Mr. Chamberlin has put a nominal value of \$1,500 upon the collection, and it is the intention of the club to start a subscription, to which every one is invited to contribute, the amounts donated to be used to purchase the collection which will then become the private property of the club. The collection in the meantime is to be loaned to the museum, with the understood condition, however, that it is never to be removed. For twenty years Mr. Chamberlin has devoted several days a week to attacking the rocks with his hammer. As each specimen was taken out he has labelled it with name, date of collection, and the street or avenue from which it was obtained. In this manner the collection has been made the most valuable in existence of any of those dealing exclusively in New York minerals. The entire number of the specimens run into the thousands, and out of the 100 distinct mineral varieties known to occur on the island, but very few are not represented. The specimens have come from rock masses as far south as Thirtieth or Fortieth streets. From present appearances, judging from the enormous blasting operations going on for the erection of various structures, the island will in but a few years be crowded with a solid mass of buildings from the Battery to High Bridge. It will then be absolutely impossible either for love or money to get at the hidden mineral wealth below the surface; and it is hidden wealth so far as beauty and delicacy of form may be reckoned as such. In Mr. Kunz's collection are many of the finest specimens found within the last few years. Among them the nine pound garnets of which we published a notice in October, 1886. An entire collection from Fort George including the finest beryls and garnets found on New York Island. The Mineralogical Club numbers at present some fifty-five members—Secretary, Geo. F. Kunz. Its curators are Dr. E. S. F. Arnold and Mr. L. P. Gratacap. Dr. Arnold's own very fine private collection of minerals he sometime ago presented to Mount St. Vincent College. Among those who have been most active in securing the Chamberlain collection for the museum are Prof. Daniel S. Martin, Mr. George F. Kunz and Mr. W. H. J. Seberg.

—Mr. M. L. Bowen, of Battle Creek, Mich., is out of business.

—Mr. George Auth, of Lacon, Ill., has patented a peculiar kind of portfolio.

—Mr. Charles G. Corliss, of H. A. Osgood & Co., Lewiston, Me., died recently.

—Mr. J. P. Steinmann, of Allegheny, Pa., has removed his store to 107 Federal street, in that city.

—Mr. N. J. Eddy, Portland, Mich., has patented a useful little clamp to attach to eye-glasses while being repaired.

—Mr. Herman Schreiber, manufacturer of gold rings, and jobber of jewelry, etc., has removed to 357 Pine street, Providence, R. I.

—The Uhl Brothers, formerly of P. L. Miles & Co., Cleveland, O., will soon open up a store of their own at No. 1 Euclid avenue, Cleveland.

—King & Eisele have started the boom on the political question by going extensively in the badge business. See their card in another page.

—Gold has been discovered in Union township, Wayne county, Pa. The ore assayed turned out gold to the value of \$7.50 per ton of ore besides a quantity of silver.

—The New Haven Clock Co. is showing many new and handsome designs in clocks, especially made for the fall business. Their catalogue is being prepared, and will be ready for distribution shortly.

—Wade & Woodcock, of Atlanta, Ga., recently sent out some postal cards with very elaborately drawn advertisements upon the back, showing the high skill possessed by their engraving department.

—S. Albro & Co., have sent out a neat little celluloid memorandum tablet to their patrons, containing their name and address on the front and that of their well known representative, Mr. L. Stevens, Jr., 176 Broadway, on the back.

—The house of J. Eugene Robert & Co. will have a most complete and varied stock of watches and movements during the fall season. Jewelers are invited to examine their novelties. The excellence of their watches is too well known to need comment.

—The attention of all practical working jewelers is called to the article which appears under the title of "Solders and Soldering." It is one of the most complete articles on the subject ever published in a magazine, if not the most complete ever published in any form. It covers the subject of solder in all forms and the mode of procedure in all qualities of metals used in our trade.

—The American Mfg. and Supply Co. are showing a new line of their famous self-winding clocks cased in genuine French marble cases, just received. These cases were made especially for the new self-winding and striking movements, and the patterns are elegant; some being richly decorated with bronze and inlaid with onyx. The designs here shown are original and cannot be obtained except in self-winding clocks.

—A queer automatic arrangement for lighting a fire, was patented last month. An attachment connects with a small clock from which another part runs into the grate of the stove. In a peculiar manner a match is lighted and the fire starts. The clock is an ordinary one, with an attachment similar to the alarm, which puts the fire-lighting apparatus into motion at any hour that its owner may desire. The patentee of this article is undoubtedly a husband, and all husbands and wives who have to light an early morning fire can now rejoice.

—A printed notice dated Attleboro, June 23d, gives notice to the trade that George H. Coggsill, M. B. Makepeace and Daniel H. Smith have formed a co-partnership under the firm name of G. H. Coggsill & Co., for the manufacture of jewelry, at Attleboro, Mass., Geo. H. Coggsill and M. B. Makepeace being general partners, and D. H. Smith, special partner. The business of G. H. Coggsill, manufacturer of jewelry and novelties in sterling silver, and of D. H. Smith, specialties in rings, charms and lockets, has been consolidated.

—Stern Bros. & Co., 30 Maiden Lane, have removed their factory to the new building, 33 to 43 Gold street, where they have greatly increased facilities for the manufacture of rings. The new factory is a great improvement over the old, and many new improvements have been introduced, the result of much thought and care on the part of the proprietors.

—The members of the well known firm of Wm. H. Robinson & Co., Providence, R. I., have changed the style of the firm to Kent & Stanley. The change took place July 1st, and during the past month the firm has removed to the new factory which has been built for their special accommodation. The enterprise of the house will be as great under the new name as under the old. The success achieved in the line of "seamless" filled gold chains, and their other lines of plated and silver chains, will be increased and enlarged in extent and variety, and with their better facilities they promise to serve their customers even more promptly than before.

—I was talking the other day to a well known bric-à-brac dealer who has recently moved to a new store on Broadway. "One of the most prevalent of modern crazes," said he, "is that for the collection of old Colonial silverware. A year or two ago my patrons wanted nothing but old English or old Dutch silversmith's work, but now-a-days they have discovered that 150 years ago silver plate of excellent design and careful workmanship was made in Philadelphia, New York and Boston. The directory of freemen of the city of New York and the advertisements in the daily newspapers of the early part of last century, show that there were nearly a score of workers in precious metals who had what for those times were important establishments. Good Colonial silverware brings from \$3 to \$5 an ounce or even more."—*The Epoch*.

—The death of Prof. Henry Carville Lewis was announced by cable, and the information given is that he died at Manchester, England, July 21st, 1888. Born in Philadelphia, Pa., Nov. 16, 1853. He was graduated at the University of Pennsylvania in 1873, and in 1879 joined the state geological survey as a volunteer, and first investigated the surface geology of southern Pennsylvania, after which he studied the glacial phenomena of the northern part of the state, and traced the great terminal moraine from New Jersey to the Ohio frontier. He furnished numerous papers on the geology and mineralogy of Pennsylvania to the "Proceedings of the Philadelphia Academy of Natural Sciences." He was elected professor of mineralogy in the Academy of Natural Sciences in 1880, and to the chair of geology in Haverford college in 1883. These positions he held at the time of his death. Since 1885 he has been engaged in geological studies in Europe, working at microscopic petrology in the University of Heidelberg. He has completed a map of the separate ancient glaciers and ice-sheets of England, Wales and Ireland. Prof. Lewis was a member of a number of scientific societies in the United States and Europe, and has contributed to their proceedings and to other scientific periodicals, including the "American Naturalist," of which for some time he was editor of the mineralogical department. It was at the British Association meeting held at Birmingham, Sept. 1886, that he read his first paper on "The Genesis of the Diamond," and in describing the peridotite of the De Beers mine, and that from Kentucky he suggested the interesting possibilities in regard to the latter locality. Since then he has been actively engaged in the fuller preparation of his paper on "The Genesis of the Diamond," visiting all the localities in the Southern States, where diamonds have been found, and it was undoubtedly his intention to read this paper at the coming meeting of the British Association in September, and then to continue his geological studies in Norway, remaining in Europe for three or four years. Prof. Lewis was an indefatigable worker, of keen perception, genial in his manner he made many friends, and although had not yet reached the prime of life yet his work is known to the entire scientific world, and he gave promise of having entered upon a long life of usefulness. In him science has lost a valuable worker, and society a useful member, and he leaves a blank which will not be readily filled.—*George F. Kunz*.



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THE JEWELERS' CIRCULAR

AND

HOROLOGICAL REVIEW.

OFFICIAL REPRESENTATIVE OF THE JEWELERS' LEAGUE, THE NEW YORK JEWELERS' BOARD OF TRADE, AND THE JEWELERS' SECURITY ALLIANCE.

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A full Index to Advertisements and Table of Contents will be found on Page 5 of this issue.

THERE was noticeable improvement in trade in general during the early days of August over that of the preceding month, and, while the demand has not yet reached the proportions that are confidently looked for during the Fall months, dealers are, nevertheless, very much encouraged. There was a goodly number of buyers in the city during August, whose purchases were liberal, and whose reports of the outlook were bright and promising. Some of the dealers in this city, who are counted among the chronic growlers, expressed themselves as well satisfied with the August trade, and hopeful for still better things during the coming month. The presidential campaign has not interfered yet with general business, but has given an impetus to the trade in campaign badges such as has never been known before. Almost every man and boy seems to feel it to be incumbent upon him to wear a political badge of some kind, and the manufacturers of them have found their profit in them this year, as they never did before. They have been brought out in almost every conceivable style and form, and that manufacturer who has not produced two or three patterns is behind the times. Badges are bought sometimes in large quantities by campaign clubs for the

use of their members, but the better qualities are purchased singly by individuals, and some of these are from elaborate designs, made in fine gold and are very beautiful. It is an ill wind that blows nobody good, so if the presidential year affects trade disastrously in some ways, it has its compensations in others, and the campaign badges come in as a part of the compensation.

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A FEW days since the writer had occasion to visit the factory of a manufacturer of leather goods and was considerably astonished to see the great variety of beautiful articles that are now made in leather of various kinds, from the small change pocket book, that sells at four or five dollars a gross, to the elaborate and beautiful hand bags, that cost from ten to forty dollars each. These goods are considered a legitimate part of the stock of dealers in jewelry, and contribute greatly to swell the volume of trade of individual dealers. Alligator skin, Russia leather, and other varieties of leather are worked into useful and desirable goods, for which there is a constant demand. Fashion dictates the forms of these goods, as it does of everything else ladies have anything to do with, and just now fashion is calling for a change in the form of ladies' pocket books. Heretofore they have been long and narrow, but the latest forms are shorter and perfectly square. Traveling and small hand bags, on the contrary, are longer than formerly, with bulging ends. Most of the Russia leather used in leather goods, is now made in this country, and is superior to that which used to be imported. A few years ago it was thought to be impossible to make leather in this country similar to Russia leather, but after some costly experiments, our manufacturers found that they could produce quite as good an article that would have the advantage of being cheaper. As a consequence, large quantities of American-made Russia leather are now exported as raw material, while manufactured goods are sent abroad in greater quantities than they were formerly imported. Genuine Russia leather used to cost about 90 cents a square foot laid down here, and much that was brought over was so old that it was rotten, thus largely increasing the cost. American Russia leather, carefully selected, can be bought now at less than thirty cents a square foot, while the poorer varieties are proportionately less costly. The metal work that enters into the construction of leather goods is also purely American, and, being made by machinery, can be furnished so cheaply that it is exported in great quantities. Machinery enters largely into the causes for the low price of American-made leather goods, for Yankee workmen, here as in every other industry, devise machinery for doing pretty much everything that was formerly done by hand. Formerly, a workman was considered doing well who made six dozen pocket books in a week, receiving as compensation for his work about \$9 a week; now, to earn the same wages, he is required to make about six gross of them, using the machinery that has been devised to aid him. In consequence of Russia leather being made here, and the introduction of machinery in the manufac-

ture of the leather goods, our people have built up a large export trade, and now sell largely in the very markets where they used to buy. Thus new markets have been opened to our industries, new employments opened up for our workmen, and, instead of going abroad to purchase leather goods, the money is kept at home, and foreign money sent here in exchange for our products. At the same time, our own people are paying less than one-half for the same classes of goods that they formerly did when both the raw material and the manufactured goods had to be imported.

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IN OUR August issue, our Kimberley correspondent referred to the fact that there had been some depression in the diamond market shortly before his writing, but that recent advices from Europe had given a better tone to the market. This refers to the transactions in mining stocks and not to the production of diamonds. Kimberley is a mining center, and, like all mining centers, its markets are more for dealings in mining stocks than in the productions of the mines. In California, for instance, more fortunes have been made and lost in buying and selling mining stock than in digging for gold, and, while the stock of a mine may have a fluctuating and speculative value in the market, the product of the mine has a fixed and definite value at all times. So in the diamond fields, mining stocks fluctuate according to the transactions of speculators, but the diamond product of the mines has a fixed value and is in steady demand. The consumption of diamonds was never greater than at present, and prices fluctuate but little; indeed, diamonds are regarded as a most excellent investment for the very reason that there is so little fluctuation in the market price for them. The recent report of the Secretary of the Treasury shows that the value of the diamonds brought to this country during the years 1886-7 was \$21,076,464, which is largely in excess of the importations of any two preceding years. If other countries keep up their proportion of purchases of diamonds, the wonder is that the supply keeps up with the demand and that prices do not advance greatly. The figures given by the Treasury department, of course, do not take into account smuggled diamonds, or diamonds brought over by tourists as a portion of their wardrobe. These items would considerably swell the value of the diamonds brought into this country each year if they could be ascertained. Occasionally a smuggler is caught at his tricks, which leaves an impression that many succeed in getting the gems through without detection, but this can never be anything more than surmise. While the demand for precious stones continues to be maintained as it has been in the past, there is little likelihood of their being any depression in the diamond market, however speculation may affect the stocks of diamond mines.

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WHILE American manufacturers of clocks and watches find an extensive demand for their goods in foreign markets, there still continues a demand in this country for similar articles of foreign make. For the year ending June 30, the value of foreign-made clocks brought in to this country was \$388,214, or \$10,000 more than the value of the importations of the previous year. The importation of watches and parts of watches amounted in value to \$1,662,072, or \$158,832 less than in the preceding year. If these figures could be compared with the value of the clock and watch productions of our own manufacturers, it would be seen that the importations play but an insignificant part in the sales of these goods in this country, while our export trade largely exceeds the importations. Since Yankee ingenuity devised machinery for making clocks and watches, our manufacturers have virtually controlled the markets of the world.

THE political campaign is now fairly opened, and the issue raised between the parties is free trade versus protection. At least it is popularly given out that the Democratic party, that favors a revision of the tariff and the reduction of the duties on many kinds of goods, is in favor of free trade, while the Republicans, opposing tariff reductions, are in favor of protection. As we predicted long ago, the jewelry trade is divided upon this issue, and jewelers' Democratic and jewelers' Republican clubs have already been formed in different sections and have gone to work actively in the campaign. Some of the manufacturers want the privilege of bringing the raw material that they use into the country free of duty, while others are fearful of the competition that they would have to meet if foreign-made goods similar to their products were permitted to be brought here free of duty. So individual interests dictate individual political action, and divide political parties. If the issue was clearly defined between free trade and protection, it would be of vital importance to the business men of the country and especially to the workingmen, but it is not worth while, even in a hot political campaign, to misrepresent issues or men. The Democratic party in the present campaign is not the exponent of free trade, but of tariff revision simply, in order that the revenue of the government, now in excess of its requirements, may be reduced to its legitimate needs. Such revision does not by any means commit the party to free trade, and, while the Republican party advocates protection, that does not by any means preclude it from revising the tariff at any time a revision may be deemed necessary. While THE CIRCULAR is in no sense a political journal, but numbers among its patrons and readers members of both parties, we like to see the issue fairly stated, and deprecate that spirit of partisanship that deals in misrepresentation for the purpose of deceiving and misleading the unthinking or the ignorant. Instead of the issue between the parties being, as many assert, free trade versus protection, it is simply tariff revision versus anti-tariff revision, as it stands at present. The activity of the canvass as it progresses may change this issue and make it more pronounced, but at present it has not taken on a form that threatens the welfare of the country in any degree whatever whichever party may be successful. We have had Democratic and Republican administrations in the past, and the country has progressed and prospered under both, and it would probably do the same in the future regardless of what political party was in the ascendant.

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THE Cincinnati Exposition this year is a very extensive affair on account of this being the centennary of the settlement of the state of Ohio and the great states surrounding it. There have been several centennial celebrations in different cities in that state, but Cincinnati has outdone every previous effort made by her in the way of an Exposition. It is held partly in the building that was originally constructed for that purpose, but additional buildings have been erected in the park across the street, and connected with the original building by covered bridges. This more than doubles the exhibition space, and it is well filled with the exhibits of the productive industries of that city and state. All the business men of Cincinnati are represented in the exhibition, and this, of course, includes her enterprising jewelers, who have spared neither trouble nor expense in making an attractive display of their goods. The writer recently paid a flying visit to the exposition building, and about the only difference he observed between that and the Philadelphia Centennial was that not so many foreign countries were represented. The exposition, however, in other respects seemed quite as attractive and well worth studying. We will not attempt to name the jewelers who have contributed to the attractiveness of the exhibition, lest we might inadvertently omit to mention some one and thus appear invidious, but we can simply say that New York might be ransacked

and a more elegant display of jewelers' goods not be found than can be seen in the Exposition buildings at Cincinnati, while there are many beautiful things shown there that would not be found here. This is not merely a local affair got up to boom Cincinnati, but is an industrial exhibition designed to show the progress made by the people of Ohio in the arts, sciences and mechanical industries. Even the streets of the city have taken on a festival appearance, and merchants and shopkeepers vie with each other in making their business places attractive. Since the opening of the Exposition, Cincinnati has overflowed with visitors, and trade has generally been good. The enterprise that has brought forth such an exhibition is worthy of substantial recognition, and it is good to know that it is appreciated by the residents of that part of the country.

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THERE is in this city an organization called the Mineralogical Club, whose purpose it is to explore the surrounding country and ascertain the character of all minerals that are discovered. Taking advantage of the Saturday half-holidays, the club designates explorations to be made each week, and their investigations are thus prosecuted systematically and with the combined experience and intelligence of the members. Their researches have been attended with important results already, and their contributions to the knowledge we already have of the formations about us have been recognized as exceedingly valuable. Here is a suggestion that might be profitably adopted by scientific men in other localities.

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CANNOT some one among the many opticians of this country invent some practical means of holding eye-glasses on the nose that shall take the place of that instrument of torture which the French have so appropriately named "pinch-nose?" If a person has a short, thick nose, and is given to perspiring in hot weather, it is simply impossible to make the "pinch-nose" stay on, while in a large number of cases, they pinch the muscles leading to the eyes and become very painful. It is a common thing to see gentlemen with livid lines along each side of the nose where their eye-glasses have pinched them, making a very tender place, which is often very painful. Occulists inform us that these eye-glasses frequently injuriously affect the sight, and if their use is persisted in the injury may become permanent. We are aware that there are innumerable devices for mitigating this evil, but cannot some one overcome it entirely? The Spencer Optical Company has introduced an eye-glass with folding side bars which rest upon the temple, thus transferring the pinch from the nose to the temple, and while these are a step in the right direction, removing the danger of injury to the sight in consequence of pinching the nose, they do not seem to cover the ground entirely. An eye-glass without the half spectacle frame, that will pinch neither the nose nor the temple, would be a blessed boon to that very large class of the community that is dependent upon these artificial aids to sight. There are human infirmities that no art can cure entirely, and perhaps defective vision is one of them, nevertheless we make the suggestion in the full knowledge that an improved form of eye-glass would meet with popular favor.

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A CORRESPONDENT writes to ask us to tell him which is the best, the very best, moderate price watch movement made. With an experience extending over a good many years, we can simply say that we don't know. To answer such a question definitely

would imply that we had carried for a lengthy period a sample of each one of the numerous low priced movements, and that we had acquired a knowledge of them would entitle us to speak with certainty. Not only is it impossible for us to do so, but we doubt if any two practical watchmakers in the country would agree in naming the same movement if asked this question. Probably the most any one of them would do would be to recommend either of a number of movements, and tell the would-be purchaser that in buying either of them he would make no mistake. Nearly every manufacturer of watches makes low priced movements, and of standard makes there are many. Every maker, we presume, thinks his production the best, and as they all have reputations at stake, they cannot afford to turn out defective or worthless movements, so that a movement that bears the name of a responsible maker can safely be accepted as being all that is claimed for it. Dealers have their preferences, but such preference is the result largely of pecuniary considerations, or habit. A dealer gets into the habit of buying movements from a certain manufacturer, whose terms are satisfactory, and he gets the idea that these movements are the best, but could probably give no better reason for his judgment than the fact that he handled them and was familiar with them, while he was not so familiar with other makes. The watch buying habit is very apt to become fixed, and a dealer buys of one manufacturer because he has always done so, and his preference for one make often runs into a prejudice against all others. We advise our correspondent to try all makes, and to hold fast to those which his customers prefer. Perhaps it is as well in many cases to let the customer have his little say in the matter, provided he has a preference, and not try to compel him to buy that which he may become dissatisfied with, to his injury and your own.

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THE MEMBERSHIP of the Jewelers' Security Alliance is continually increasing, as its advantages become better known to the trade. Speaking of the security this membership affords him, a dealer in a prominent western city recently said that he would be in a constant state of worry and anxiety regarding the safety of his stock were it not for his certificate of membership in the Alliance, which he keeps conspicuously displayed in his store. He carries a large stock of goods, and is located in a city where the police protection is inadequate while private watchmen in the business streets are unknown. There have been numerous burglaries perpetrated in the business houses of the city, but the burglars have never attempted to enter his premises, which fact he attributes entirely to his certificate of membership in the Alliance. Burglars have had such a rough experience with the Alliance that they fight shy of any place that they know to be under its protection, and consequently a certificate of membership serves a better purpose than a private watchman, for it is on duty day and night. It virtually says to the criminal classes, if you undertake to rob these premises, the Alliance will take charge of the case, the best detectives will be employed, and neither expense nor trouble spared until the perpetrator of the robbery is lodged in jail. There are a number of burglars now in state prison who can bear witness to the unrelenting energy with which the Alliance follows up a case it undertakes, and every member is entitled to call upon it the instant burglars have visited them. The Alliance takes entire charge of the case from the moment it is notified, and the victim of the robbery is not called upon to spend a dollar of money or to lose any time on the case—the robbers are pursued, the property recovered if possible, and the burglars prosecuted by the Alliance. It has been demonstrated that this is the best protection any dealer can have, and as it costs but five dollars a year for membership, no one can afford to do without it. Dealers desiring to become members can communicate with any of the officers whose names are given in another column of this issue of THE CIRCULAR.

Gilding and Gold Plating.

Continued from page 47, August, 1888.

WITH REGARD to the regulation of the quantity of the deposited metal, this is a part of the practical understanding of the electro-depositor. We know that when all the arrangements are properly made and carried out, the quantity of metal dissolved and deposited in the vat is in direct proportion to the quantity of zinc dissolved and acid consumed in each alternation of the battery. With a perfect depositing liquid, good battery arrangements and pure materials, for every equivalent of zinc dissolved in each alternation of the battery, an equivalent of metal is dissolved on one side and an equivalent

deposited on the other in the depositing vessel. For instance, for every equivalent ($\frac{6.5}{2} = 32.5$ parts) of zinc so dissolved, and $\frac{9.8}{2} = 49$ parts, or one equivalent, of oil of vitriol consumed in the battery, an equivalent ($\frac{6.35}{2} = 31.75$ parts) of copper is deposited in the sulphate of copper solution, or an equivalent (108 parts) of silver in the cyanide of silver plating liquid, and a similar quantity of copper or silver dissolved at the anode. But in practical working the materials are rarely, if ever, pure or the arrangements perfect; the zinc nearly always contains a small proportion of other substances, the mercury contains tin or lead, and the sulphuric acid contains a little nitric acid or plumbic sulphate. The acid liquid of the battery is often too strong; much of it is also thrown away before it is completely exhausted. The zinc plates are not kept well amalgamated or the silver well platinized, or the plates are suffered to remain too long in the liquid when not in use. The metal of the anode is also frequently impure; occasionally some of the deposit is allowed to re-dissolve, from the battery power becoming low and from not stirring the solution; in some solutions a part of the electric current is expended in evolving gas at the cathodes; and, finally, the repeated operation of "scratching" removes some of the deposit. Allowing for all these and other unavoidable sources of loss in practical working, about one pound only of copper can be deposited in the ordinary sulphate solution, by the consumption of from one and a quarter to one and a half pounds of zinc, and an equivalent quantity of acid in each alternation of the battery.

With regard to regulation of the speed of deposition, we debated this subject in some preceding number; with every liquid there is a limit of rate of deposition per given amount of surface, beyond which it is impossible to obtain good metal, and that limit differs with every different liquid, and probably with each liquid at every different temperature, besides being dependent upon the kind of receiving surface. It is well known to electro-depositors that it is usually much more difficult to produce a reguline deposit upon rough surfaces than upon smooth; upon cast iron than upon most other metals, and that to obtain it at all upon that metal the rate of deposit must be less than upon a smooth surface of pure copper or silver.

Magneto-Electric Machines.—As this is not a treatise upon dynamic electric, but only upon the application of it to metallurgical operations, and as our space is only limited, we forbear from entering into special details of every machine, beyond giving the general features of each as used on the continent and England.

Wilde's Magneto-Electric Machine.—It consists essentially of two electro-magnets, a small and a large one, with insulated copper wire coiled transversely upon them, and with armatures of soft iron (also

with insulated copper wire coiled lengthwise upon them) revolving between their poles. The residual magnetism of the small (or upper) electro-magnet excites a feeble current in the coil of its revolving armature. This current circulates through the wires of both the magnets and increases the magnetism; and the increased magnetism of the small one reacts upon the armature and increases the current, and so on until both the magnets are saturated with magnetism at the expense of mechanical power. The current from the revolving armature of the large one alone is used for electro-deposition or other purposes. "The armatures of both machines are driven at a speed of about 2,000 revolutions per minute, and, at this rate, the current from the large one deposits twenty-eight ounces of silver an hour, with an expenditure of two horse power."

These machines are in extensive use at the works of Elkington & Co., in Birmingham, England, for the purpose of depositing copper statues and for general plating with silver; also at the copper works of the same company at Pembrey, near Swansea, for purifying by electrolysis upon the large scale, crude slabs of unrefined copper from the ordinary smelting process. A single "multiple armature" machine of Wilde's at those works deposits four and one-half hundred weights of copper in twenty-four hours. These machines have also been successfully applied to the economic production of coppered iron rollers for calico printing. To keep the armature cool, the ends of the large electro-magnet is made hollow and a current of cold water caused to flow through the hollow.

Gramme's Magneto-Electric Machine.—This consists essentially of a ring of soft iron, covered with a large number of coils of insulated copper wire, the respective ends of which are connected with the separate sections of two commutators fixed upon the axis of the machine. The ring with its coils and commutators, fixed upon the axis, revolves between the poles of an electro-magnet.

By this machine to deposit 60 grams of silver requires one horse power and a speed of 300 turns per minute; the tension of the current being equal to that of two Bunsen's cells, and its quantity equal to thirty-two such cells of ordinary size. At a speed of 275 revolutions per minute it has deposited 525 grams of silver per hour; at 300 turns, 605 grams; and at 325 turns, 675 grams. The weight of the copper wire on the fixed electro-magnets was 135, and on the moveable ones only 40 kilograms. This machine is in use at Christophle's large electro-plating works in Paris.

The most recent form of magneto-electric machine is that of Messrs. Siemens and Altreeck.

The chief obstacle hitherto met with in the use of these machines has been that after a few hours' action the different parts are liable to become considerably heated, partly by the incessant molecular changes attending the variations of magnetism and partly by the conduction resistance in the coils of wire. This has been largely overcome in Mr. Wilde's machine by the employment of several small machines instead of one large one, and by allowing a stream of cold water to run through the hollow ends of the magnet. In Gramme's machine, provided it is not worked too fast, the heat is reduced to a moderate amount; and in a large machine of Siemens' and Altreeck's in the Vienna Exhibition, I also observed but little rise of temperature after it had been in action a considerable time. Another objection to some of these machines is the complexity of the commutator. The electric current from all these magnetic machines is regulated for electro-metallurgical purposes by interposing a piece of thin iron wire in the circuit.

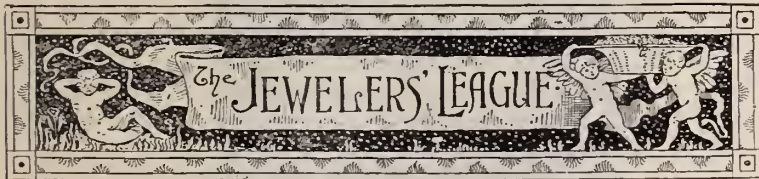
Thermo-Electric Piles.—The two most efficient kinds of this instrument appear to be those of Noë, of Vienna, and Clamond, of Paris. The former is the more quickly excited and gives a powerful current; and the latter is the most strongly constructed.

Noë pile consists of small cylinders, about one and one-quarter inches long and three-eighths of an inch in diameter, of an alloy of about thirty-six and one-half parts of zinc and sixty-two and one-half of antimony as the positive, and stout German silver wire as the negative element. Twelve of these pairs have an electro-motive

force of one Daniell's cell, and twenty of them that of one Bunsen. The resistance of twenty of them is about equal to one ohm. With a great external resistance twenty of them are equal to one Bunsen's, and with a small external resistance, twenty *quadrupled* ones are somewhat stronger than one of Bunsen's elements.

The construction of a few elements may, without the use of figures, be described as follows: The conjunctions of the elements are heated by small gas flames, and the alternate junctions are cooled by the heat being conducted away by large blackened sheets of thin copper. To protect the German silver wire from oxidation, it is enclosed in a tube of that alloy where the flame impinges against it, and to prevent the ends of the positive cylinders being melted they are faced with iron and a thin sheet of mica. The German silver wire may be heated to low redness. The usual form of the apparatus is in ninety-six elements, which may be either used as ninety-six by one, forty-eight by two, or twenty-four by four, and instantly changed from one to the other of these arrangements by means of a most ingenious and effective current transposer, which does not require cleaning. The current attains its maximum strength in about one minute; that from the single series decomposes water rapidly, and that from the quadruple series excites a large-electro magnet powerfully. I have used this apparatus with great satisfaction for many brief experiments. The instrument is made by W. J. Hauk, Kettenbrückengasse, 20, Vienna, Austria, also by P. Dörfell, Berlin, Prussia. It is, I am informed, in use for electro-plating in Dittmar's electrotype and lamp manufactory, Vienna.

(To be Continued.)



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THE JEWELERS' CIRCULAR is the official paper of the Jewelers' League and has been selected for the publication of all matters of interest pertaining thereto. Letters or inquiries pertinent to its business or purposes, and which might interest the trade or inquirers, will herein be answered. Address *Jewelers' League, Box 3,444, P. O., New York*, or the office of THE CIRCULAR.

At the regular monthly meeting of the Executive Committee of the League, there were present Vice-Presidents Lewis and Johnston, Chairman Howe, and Messrs. Houghton, Jeannot, Bardel and Sexton.

There were six changes of beneficiaries granted, one application for membership was rejected, and the following applicants were admitted to membership:

August Bruder, Fort Wayne, Ind., recommended by Jacob Dorst;
Chas F. Gorden, Shreveport, La., recommended by T. H. Korthum;
Eliezer Hertzberg, San Antonio, Texas, recommended by Sam'l C. Bell;
Frederic H. Levy, San Francisco, Cal., recommended by Sam. H. Levy;
Geo. S. Smith, Jersey City, N. J., recommended by C. J. Dodgshun.

Botch Workmen.



SUBSCRIBER, in remitting two dollars to renew his subscription to THE CIRCULAR, says that while he cannot afford to be without the paper, it comes very hard on him to spare the money because repairing, on which he relies mainly, is so dull. He complains that he has had to "kick twenty-five watchmakers out of the town during his business career because they were so ignorant," and then he goes on to complain that the people of the place employ the first "umbrella mender" that comes along to repair their watches.

Well, why shouldn't they? By his own showing, this watchmaker has taught the people of his place that botch workmen may be trusted to repair watches, and it is not surprising, therefore, that they select the botches themselves rather than let him do it and make a profit on the job. The repairer who makes a practice of employing incompetent workmen because they are willing to work cheaply, deserves to see his trade drifting into the hands of the "umbrella menders," or anyone else, for he has demonstrated that he is not a fit person to be trusted with a watch, be it valuable or otherwise. The man who has employed twenty-five botch workmen has done enough to debauch an entire community as to their appreciation of the skill required in repairing watches, and taught them that it makes little difference whether a man calls himself a watchmaker or a blacksmith, he is likely to get the job of repairing their watches if they are left with the jeweler who announces repairing as a specialty. The dealer who expects to control the patronage of the community in which he lives, must be prepared to do the work required in a skilful and satisfactory manner, and this he certainly cannot do if he employs cheap tramps, who are more apt to spoil a fine watch than to improve it. Dealers in small places are very apt to say that they cannot afford to employ skilled workmen, and must put up with such men as will work for a pittance. If they have not skilled workmen in their employ, they should not undertake to do fine work, but when a job of repairing comes in that is beyond the capacity of their workman, they should send it to the nearest place where good workmen are employed. They will thus not only secure the work and the profit attaching thereto, but also their reputations, which are worth considerably more. In every city of importance there are dealers who make a specialty of repairing for the trade, doing work for small dealers at a price that will enable the latter to charge their customers a fair profit; these specialists make a point of employing only the best workmen, for there is more profit to be derived from the labor of one good, skilled workman, who thoroughly knows his business, than from half a dozen botches, who putter away their time in trying to find out what is required, and then not knowing how to do it, and so spoiling the work and losing the time that they are paid for. Small dealers will find it more profitable in many respects to send out their fine repairing than to undertake to do it themselves, unless they have enough to do to warrant them in employing skilled workmen at fair wages.

But the small dealers are not entirely to blame for not keeping first-class workmen about them; the fact is, that such workmen are becoming scarce, and are nabbed up in the larger establishments, where the amount of work to be done is sufficient to warrant the payment of good wages. We have constant applications for first-class watchmakers, and the supply is so limited of good men out of employment that it is a work of time to fill a vacancy satisfactorily. Every day adds fresh evidence to prove that a training school, established on a broad and comprehensive basis, is much to be desired in the jewelry trade. In other countries such schools exist, and yet in no other country is the necessity for such schools of instruction so pressing as in this. Trades unions have set their faces against the apprentice system to such an extent that it is almost impossible for a boy to find an opportunity to learn any trade, while the modern practice of making watches by machinery has greatly lessened the opportunities in the jewelry trade. In the great watch-

making establishments, boys are taught to operate machines that do certain classes of work, and when they become expert in managing a particular machine, it is more profitable for them and for their employers that they should be retained continuously at work on that special machine, so that the boy has no opportunity to become an all-round workman. Yet there are thousands of ambitious young men who would only be too glad of an opportunity to learn the watchmaking trade in all its phases if they had the opportunity. In the absence of a general school for teaching the trade, several proficient workmen have opened private schools, putting in such tools and machinery as are required to enable them to take care of a few pupils. This is most excellent so far as it goes, but the plan is not comprehensive enough to cover the required ground. What is wanted is a well endowed national school so equipped with tools, machinery and instructors as to be able to care for a large number of pupils at once, and to instruct them thoroughly in everything pertaining to the artistic and mechanical requirements of the trade. Until something of this kind is done, there will probably be an increasing scarcity of good workmen.

Advice to Watchmakers' Apprentices.

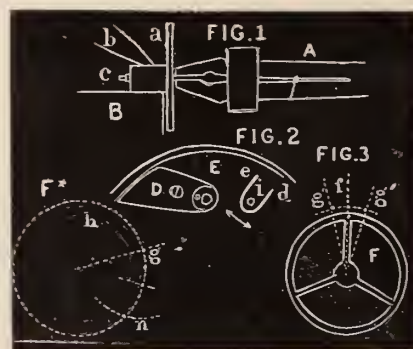
BY A MAN WHO HAS SPENT TWENTY YEARS AT THE BENCH.



AFTER GOING through the train carefully and removing the burr from the teeth it may be necessary to polish the pinion leaves. At any rate, polishing rusty pinions is a job which occurs so frequently I may well be pardoned for describing a quick and efficient process. An essential tool for this purpose is a long slim-nosed pair of slide tongs which will grasp firmly the staff part of either a third or fourth wheel pinion, as shown in fig. 1, where *c* represents the pinion and *A* the slide tongs. To effect the polishing, we sharpen a piece of

peg-wood to fit the space between the pinion leaves, and resting the pinion on a block of metal, as shown at *B*, we dip the sharpened peg-wood, *b*, into a paste composed of oil-stone dust and oil, and rubbing the peg-wood back and forth, renewing the oil-stone dust and oil every few seconds until one groove (space between the pinion leaves) is perfectly smooth, and repeat the process until the entire pinion is perfectly smooth. To polish the pinion, first remove all the grit from the leaves with pith, and then, having re-sharpened the peg-wood, make a paste of diamantine and oil (or you can use alcohol with the diamantine) and your peg-wood point as before. There is another trouble which we very often find in these cheap cylinders, and this is a bad depth between the fourth wheel and scape wheel pinions. I have repeatedly read instructions for changing the depth between the fourth and scape wheels, and in every instance the instructions have been for moving the bridge over the scape wheel. This is all well enough as far as it goes, but in many instances this will not effect the necessary result, and besides it materially effects the uprightness of the scape wheel. If the watch is a fine one and the owner will pay for the job, put in a new fourth wheel or a new scape wheel pinion. Of course it is supposed the workman is to know exactly what to do, and he goes about it without any hesitation or experimenting. This is a great trouble with many of our workmen; they have to experiment too much. If the watch is, as we have been supposing all along, a poor, cheap affair, and the depth is bad between the fourth and scape pinion, drill a hole through the lower

plate at *c*, fig. 2, then with a fine saw proceed to saw around a portion of the lower plate, as shown at the line *c d*, making in fact a bridge which we can bend around to one side and instantly correct the depth. Now don't let any one put up their hands in holy horror at such a course, because it really and readily cures the watch of a fatal fault, and it can hardly be seen except the dial is removed. If it was a fine watch of course I would not advise it: and a great deal more, *a fine watch would never need it*. It certainly in no way injures the watch, and therefore is justifiable. In such instances, as a change of the bridge over the scape wheel will effect a cure of the depth, I would not recommend the course just described, but there are many instances where no change of the bridge will correct the depth. I have done what I describe, and the worst botches of my neighbors were the ones to kick. They would file and monkey with the steady pins of the bridge until you could never put it twice in the same position; but to saw into the plate—Oh, horrors! It makes a good, sound job, as all must admit, is quickly done, and hardly discernable from the back. There is another thing about these watches, and this is, the plating soon wears away and the watch looks badly. When we are cleaning one of this kind it takes but a few minutes extra to make the movement look as well as new. These watches are not nickel plated, they are merely cold silvered, and to restore the coating, make a solution of two drachms of crystalized nitrate of silver in two ounces of water; make a solution of three drachms of cyanide of potassium in another two ounces of water; when these substances are perfectly dissolved separately, mix the two solutions



together and they will instantly turn black; stir them well and in a few minutes they come clear; pour the combined solution into a six-ounce bottle and add one ounce of fine whiting. When you have one of the so-called nickel-plated movements which shows yellow, pour out about a tablespoonful of the mixture (after shaking to mix up the whiting) into a glass dish and with an old watch brush go over all the parts which have ever been so coated, throwing the pieces into clean water as fast as they are done until all the parts are gone over. The solution does no injury to the steel parts, and does not change the color. Take out the several parts and dry them on a soft napkin, and throw into alcohol to be again wiped off. If the wiping is done carefully out of the alcohol, they will need no brushing; all one needs to do is to peg out the holes. The bronze or red brass balances should be dipped into a solution of cyanide of potassium in the proportion of an ounce to the quart, then rinsed well in water and dipped into alcohol, and finish by rubbing with a clean buff on a piece of cork in the bench vice. Try the balance for poise and if out of true correct it. In many of these watches the scape wheel is out of round. There may be several reasons for this; a common cause is the scape wheel pinion is not turned to fit the hole in the scape wheel, and the workman hammered it on some way and thereby got the wheel out of round; the test for this condition is to take off the hairspring and place one of those little tinsel wedges which all watchmakers get with Elgin ladies' watches, under the balance precisely as these Elgin movements come from the factory. Wind the watch a little and move the balance back and forth just enough to let the teeth escape. If the balance has to be moved for each escape of a tooth the same arc, it is positive evidence the scape wheel is true in the round. To test the angle of a cylinder escapement, take

a fine pointed pair of dividers and sweep a circle a trifle larger than the balance on a piece of brass, as shown at diagram *F**. With our dividers still set we assume a point in the circle *h*, say at *g*, diagram *F**, and sweep the short circle *n*. Now, the arc between the point *g* and the line *n* on the circle *h* is of course just 60 degrees, and half this arc of course 30 degrees. If now we take the little pit on the balance rim, which tells us the point where the hairspring stud goes, and turn the balance so that a scape wheel tooth just escapes on that side, and opposite to the small pit in the balance make a slight prick point on the watch plate. We will suppose this mark comes at *g*, fig. 3; we take half the arc from *g n*, diagram *F**, and lay out the pit *g'*, fig. 3. Now, if in moving our balance back and forth as indicated by judging from the dot *g* on the balance and the dots *g g'* on the plate, and each tooth escapes on the balance being moved on the arc of 30 degrees, it is evident the scape is all right.



[FROM OUR SPECIAL CORRESPONDENT.]

ATLANTA, August 13, 1888.

Since my last letter to your valuable paper from the south, there has nothing transpired down here that will prove of unusual interest. It is mid-summer with us, and especially so far as our trade is concerned, that period being the dulllest of the dull season. While there are not many goods being marketed just now great preparations are being made for the fall trade. When it opens, business will be brisk and goods will be handled rapidly.

The fact that the cotton crop is unusually fine, gives life and encouragement to the merchants and they are basing their calculations upon it. The agricultural resources of the south are its mainstay and when they fail everything seems depressed in consequence of the scarcity of money.

Only a few weeks ago a party came to Atlanta from South America and after examining the topography and formation of the country contiguous to this city, asserted that it was a diamond bearing country and forthwith went to work in search of diamonds. So far the search has not been over fruitful, yet, several small diamonds as well as other stones of great value have been found. It is a fact that the lower ranges of the great Appalachian system of mountains do abound in large variety and number of precious stones, and from the signs of the times the day is not far distant when they will be more eagerly sought after than at present. Capital is coming south and just in proportion to the amount invested for the developing of the great resources hidden in our hills and mountains, just to that extent will fortunes be made; by the careful investor. The south so long dependent on agricultural products entirely is beginning to have other resources. It is predicted by a fine business man from New York that the coming gems will put her "in the saddle" financially if not politically.

Mr. Hanson, the head of the manufacturing department of the large firm of J. P. Stevens & Bro., has invented what is claimed to be one of the best as well as the cheapest watches in the country. It will be known as the Hanson watch and is a marvel of simplicity and excellence. Exclusive of the mainspring barrel, winding stem and pinion, this watch has but three separate pieces in the stem-wind and hand-setting mechanism. It is also a lever watch, handsomely gilded, compensation balance, $\frac{3}{4}$ plate, enamel dial, second hand, open face, nickel case and the workmanship is excellent throughout,

with jewel endstones and holes for the balance pivots. This watch is to be sold at retail for \$5.00.

Mr. Hanson and his friends think he has a splendid timepiece. Several hundred are now being manufactured in Switzerland, and will be delivered by September 1st. Steps will be taken to erect a factory in this city for the manufacture of this watch.

The live house of J. P. Stevens & Bro., have been doing what might be called a phenomenal business for this season of the year. They sold during the past month over three hundred gold watches. They push their business, and their sales will amount to considerable if their success continues. Mr. Stevens showed your correspondent an accepted order from Rockford, Illinois, for 500 movements, the largest order ever placed at one time by any southern house. This house has alone ordered \$50,000 worth of watches for its fall trade.

Mr. A. L. Delkin, manufacturing jeweler, has been sick for some time, but has in part recovered and is able to be on the streets.

Mr. E. A. Johnson, who opened a retail store in Rome some time ago, is reported as having a satisfactory trade.

Mr. Fred. Stilson, who is one of the oldest as well as the best jewelry men in this city, has taken a short vacation and has gone to the mountains.

T. J. K.

The Diamond Trade.



OUR correspondent at Kimberley, South Africa, gives us a very picturesque account of affairs in that far away country in his letters from month to month, and makes us more familiar with the methods employed in extracting diamonds from the bowels of the earth and of the natives as well, occasionally. As the diamond mines are located in a wild country, and have been worked largely by the wildest of savages, the idea has generally prevailed that diamond mining was conducted in a sort of hap-hazard manner, and that success was merely a matter of chance. So it was in the early days of the discovery of diamonds at the Cape, as was gold mining in California in the early days of its discovery. But when it became an established fact that gold existed in great quantities in California, scientific explorations succeeded in locating the sources whence the surface gold accidentally came, and, the sources once known, the work of extracting the gold therefrom became a scientific matter, and men engaged in the business of mining as they would in any other legitimate enterprise, bringing intelligence to bear and introducing modern machinery to simplify their work. Nothing is left to chance, but the best means of arriving at a given object are employed, and money is expended lavishly in procuring the means. So it is at the diamond mines in Africa. The fact has been established that in a large area of country, diamonds are to be found, deeply hidden beneath the surface of the earth, and are only to be obtained by the most scientific methods of mining. The elements of chance are no longer trusted to for their discovery, but capitalists buy machinery and employ laborers to dig and delve for these precious stones in substantially the same manner that machinery and men are employed in mining for coal in the mountains of Pennsylvania. Gold mining and diamond mining are conducted on a plain matter-of-fact basis, money being freely put into the mining enterprises that money may be taken out. The romance and the excitement of finding such treasures have been destroyed by the practical business men who have invoked science and skill to take the place of chance. The work is prosaic enough, and entirely lacking in that romantic interest that attached to the wonderful discoveries of precious stones and metals that the heroes of the Arabian Nights were continually making to enable them to wed the objects of their affections. Steam and water power have usurped the functions of the magician and the

genii of the story, and dirty, thieving, drunken Africans do the work of the magic lamps and transformation rings. But the diamonds of the Arabian Nights were purely works of the imagination, while those procured by modern skill and complicated machinery have a decided commercial value, which never seems to decrease appreciably with an increase in the supply.

But even mining for diamonds has its drawbacks, like any other business enterprise, and fortune plays fast and loose with those who invest their money in it. One of the greatest difficulties encountered is the pilfering carried on by the employees of the mining companies, and it is almost impossible for skilled English detectives to keep track of all the devices invented by the wily blacks to secrete valuable diamonds which they find in the course of their work, and dispose of to the purchasers of illicit diamonds that abound at the Cape. By this means large quantities of stolen diamonds are put on the market in competition with those legitimately produced, tending to break prices and prevent honest enterprise from reaping its just reward. Then, too, there has existed great competition among the mining companies themselves, each pushing its monthly output on the market regardless of the demand, whether brisk or dull. In the future the state of affairs has been guarded against, the De Beers and Kimberley Central Companies having purchased or amalgamated the most of the other mines, thereby giving them almost the entire control of the market. It took many millions of dollars to bring about this combination, but it has been accomplished and seems to work to the advantage of both the producers and the general dealers, a more uniform price being maintained for diamonds throughout the world, while no material advance in price has been made.

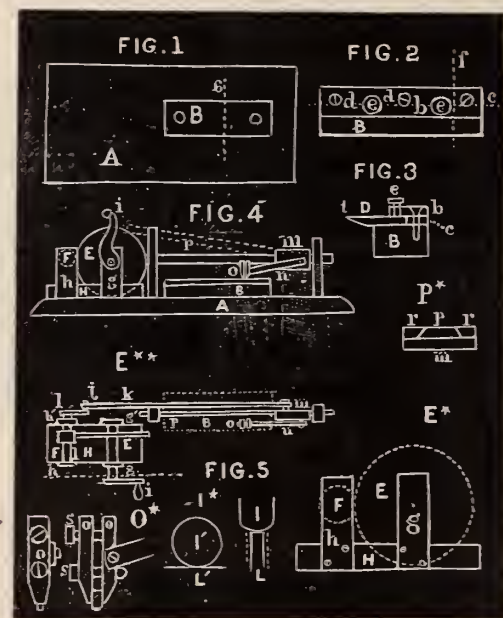
Problems in the Detached Lever Escapement.

BY DETENT.



GREAT many watchmakers would like to have a cheap and convenient apparatus for grinding and polishing pallet jewels. I have seen published at odd times several descriptions of such devices for using with lathes of different makes, but the one I am about to describe needs no lathe, and yet I assure my readers that there is no pallet jewel grinding machine in existence which will do more desirable or better work. It grinds flat or convex surfaces with equal facility and at the same time with extreme accuracy. I will first describe how the machine is made for grinding exposed pallets, and then follow with a description of the machine so modified as to grind close pallets for English or Swiss watches. The first thing needed is a bit of some hard wood board, 5 inches wide and about 10 inches long, to build the grinding machine upon. On this board we place another smaller piece of hard wood board, 1 inch wide, 4 inches long and $\frac{1}{2}$ inch thick. At fig. 1 is shown a plan of the large board at *A*, and the smaller half-inch piece at *B*. The half-inch piece is secured to *A* by two $\frac{3}{4}$ -inch wood screws. On top of the piece *B* are placed two pieces of $\frac{1}{8}$ thick sheet brass; one of these pieces is half an inch wide and 4 inches long, the other $\frac{3}{4}$ of an inch wide and 4 inches long. The brass pieces are placed in this order upon the block *B*: first, the brass strip $\frac{1}{2}$ an inch wide, then the $\frac{3}{4}$ inch strip on top and the two strips held in place by the three brass screws, *d d d*, which extend through the two brass pieces into the wood piece, *B*. At fig. 2 is shown a plan of the arrangement, and at fig. 3 is a vertical section on the line *f*, fig. 2. The $\frac{3}{4}$ inch wide brass strip is illustrated in the cut at *b*, and the $\frac{1}{2}$ inch at *c*. The $\frac{1}{2}$ and $\frac{3}{4}$ inch brass are also designated in fig. 3 by diagonal, parallel lines. The piece shown at the vertical parallel lines at *D* is a copper lap charged with diamond dust or emery for grinding the pallet stones into shape, and by changing *D* also polishes them. To enable us to realize rapidly the action of a sufficient

grinding surface, the ordinary back and forth motion of the hand must be multiplied eight or ten times. To accomplish this take the main wheel and center pinion of an old clock and mount them on the base or foundation board *A* by means of two upright pieces of heavy sheet brass. These brass supports are placed on each side of another hard wood block (*H*) to be also secured to the base board *A*. It is altogether probable the old frame in which the wheels are placed in the clock can be used. At any rate the general form of these supports is shown at *E F*, fig. 4, and separate at *E**. If new supports (*g u*) are used, they can be secured to the piece of board *H* with wood screws, as shown. At diagram *E*** is shown a plan, as if seen from above, of the old main wheel *E* and center pinion *F*. Attached to the arbor of the main wheel is a crank, *i*, for turning with the hand the great wheel and giving motion to the center pinion. The center arbor *l* has also a crank, *j*, mounted upon it to give motion to a slide which carries the pallet jewel back and forth over the lap *D*. The crank *j* should be about $1\frac{1}{2}$ inches so as to cause the slide *m* to traverse 3 inches. The idea of the machine is that the pallet jewel is attached to the slide *m* by the arm *n*, the end of the arm *n* terminating in a clamp, *o*, for holding the jewel. The slide *m* moves back and forth on the bar *P*, and by raising or lowering one end of the bar *P*, a greater or lesser rocking motion can be given to the face of the pallet stone. The bar *P*, if elevated to the position



indicated by the dotted line—I mean about in the same proportion—would give quite convexity enough to the face of the jewel. Allow me to digress from the description to say that the convexity of many of our American pallet jewels is quite too much. Such jewels work very nice when the watch is new, but after a time the face of the jewel really flattens, and then the time commences for extra friction. To illustrate what I mean, reference is made to fig. 5, where *L* represents a pallet stone and *L'* a tooth of the scape wheel. The theory of the case is that a convex surface cannot touch a flat surface, except at one point, as indicated at diagram *L**, where a circle is represented as resting on a straight line. Now, theoretically, this is true, but when it comes to practice, if the circle *L'* and the plane *L'* are not of adamant the face of the convex surface will flatten. It certainly does when something no harder than a ruby is used, and very few American pallet jewels are rubies even, they generally are garnets. The convex jewel does not wear a groove in the face of the tooth because the end shakes of the scape wheel arbor and the pallet staff give an up and down motion corresponding to the lines at fig. 5. The slide *m* is made of brass and should be about an inch long. The bar *P* is best made of steel, but good hard brass will answer, half an inch wide and 6 inches long by about $\frac{1}{8}$ of an inch thick. A magnified cross-section of both the bar *P* and slide *m* is given at diagram *P**. It will be seen the edges of the bar *P* are

beveled to an angle of about 60° , and the slide *m* held to the bar by the pieces *l' l'*. The connecting rod *K* connects the crank *j* and slide *m*. The method of making these connections is too easy to need description. The jaws *o*, for holding the pallet jewel, are simply two pieces of steel, one of which is firmly attached to the bar *n*, and the two united by the screws *s s*, as shown at diagram *O**. The lap *D* I mentioned as being made of copper, this metal being generally used, still other metals will answer. Hardened steel is excellent if it is perfectly coated with tin, or better, soft solder to prevent its rusting, as water is to be used for grinding and polishing all kinds of stones. The lap shown at *D* we will suppose to be made of steel and hardened. It of course cannot be quite as thick as the brass piece *c*, because after we have ground off the face of the pallet we must also polish it, which we could never do without changing the laps, consequently there must be room enough left under the piece *b* for the laps *D* to slide under freely, when the clamping screws *c c c* will grasp them. If a diamond lap (*D*) is to be used, copper is the material *par excellence*, as the tin-coated steel laps would hold the small particles but poorly. With steel laps, or even iron tin-coated, such a machine grinds rapidly with nothing but emery. I should say that in coating steel or iron laps with tin only the thinnest coat is desirable. I will finish the machine in my next communication—in this it was my desire to convey a general plan of the machine and furnish working details for as far as the thing was carried.

The Detached Lever Escapement.



COMPLETE lever escapement is composed of and contains two distinct actions: 1. The action of the wheel and pallet; 2. The action of the lever of forks and rollers. These two actions are produced each by two acting parts, so that the number in those parts in the lever escapement is four. They are: the wheel, the pallet, the lever and the rollers.

The wheel is flat, its teeth projecting in its own plane. The teeth are of various shapes, corresponding to the way in which the lifting is performed, and vary from a sharp pointed form to a full inclined plane. The wheel is mounted upon the escape pinion, by which it is connected with the work.

The pallet is also of very different shape and proportions. In most cases its body lies in a tangential direction to the circle of the wheel, on which the action of these latter take place. These parts are called the overs of the pallet. In most cases the parts operated on by the wheel teeth are jeweled with hard stone, to provide for greater resistance against wearing. The pallet has a hole in its center by which it is fixed on the pallet axis, or pallet staff, and moves with this axis.

The lever is a bar of metal, fitted by its holes on the pallet axis, and fastened at a certain angle to the longitudinal direction of the pallet. This angle is quite arbitrary, and depends entirely upon the intended arrangement of the escapement. If there are two arms of the lever, one of them serves merely to establish the equipoise, while the other is the acting arm. This latter has in the greater number of lever escapements a notch cut into its extremity, wherefore it has been called the fork.

The roller in the ordinary construction of lever escapements carries the impulse pin, commonly made of a ruby, working into the notch of the fork. It is a round disc fitted by its center hole on the balance staff.

These four parts have three centers of motion, the pallet and lever moving together on the same axis. They are made in manifold ways, thus constituting an indefinite number of different lever escapements, the whole of which it would be a very tedious task to describe.

But as all these varieties result from different combinations of the

various kinds of the two before-mentioned actions forming the lever escapement, and which, being entirely separate actions, may be combined in every possible way, it will simplify the treatment of the subject to establish a classification of these two actions, according to the various ways in which they take place, and then to explain what is required for their combination. Therefore, the various constructions of the lever escapement may be classified from two principal points of view: 1. With regard to the way in which the lifting of the wheel on the pallet takes place; 2. With regard to the means by which the impulsion is transferred to the balance.

The action of wheel and pallet.—This action consists in an alternate lifting, imparting a small vibratory motion to the pallet, by the means of the diagonal driving-plane on each arm of the pallet. This lifting is not permanent, because the two driving-planes are interrupted by two planes nearly concentric to the pallet center, so as to arrest or lock the wheel tooth dropping against them. By the interposing of these locking faces, the lifting of every tooth, ending with the drop of this tooth from the edge of the lifting plane on one pallet arm, is succeeded by the resting of the corresponding tooth on the locking face of the outer arm. There it remains locked until released by an action which shall be spoken of later.

The locking faces must have a slight deviation from the line adapted for the mere resting or locking of the wheel tooth. This deviation serves to produce a tendency of the pallet arm to be drawn farther toward the center of the wheel, thus securing the detachment of the vibrations of the balance, by preventing the pallet from leaving its position of rest by the slightest movement of the watch. This tendency of the locking faces is commonly called the "draw."

The lifting of the pallet which constitutes the principal part of the wheel and pallet action can be produced in three different ways: 1. The inclined planes being on the pallet, and the wheel teeth having a simply-pointed form—ratchet teeth; 2. The inclined plane being on the wheel teeth, and the pallets presenting two thin pins or edges; 3. The inclined planes being partly on the pallet and partly on the wheel teeth—club teeth.



[FROM OUR SPECIAL CORRESPONDENT.]

PARIS, Aug. 10, 1888.

The best time for artistic inspiration is evidently that when nature brings out in plentiful abundance all her treasures. Those who are able to see and to feel the manifold beauties of her magnificent display must be stirred with the longing to reproduce them according to their own means. Jewelers or silversmiths who go abroad, or simply in the country during a part of the summer, to have a change (so they say), cannot help viewing everything at the standpoint of their own business, as if they have been used to throw into it the whole of their energies, and it is more and more necessary nowadays, they must have an irresistible bent to turn into account all which solicits their admiration. They will either apply themselves to copy as near as possible what they see, or merely take some hints leading them to devise new designs and decorations. Many of them have another strong reason this year not to lose sight of their business during the summer days, as they must think already of preparing themselves for next year's Universal Exhibition.

The miserable weather we had in July allowed us, fortunately, a truce of three days, which happened to be the eve, the day and the morrow of our National *fete*.

On the bright afternoon of the 13th was uncovered Gambetta's

monument, erected on the *Place du Carrousel*. A numerous attendance, headed by President Carnot, witnessed the event. Several speeches were delivered. The very spirited one of Mr. Floquet was received with cheers, the enthusiasm of the crowd being partly due to the Prime Minister's victory in his duel, fought a few hours before, with General Boulanger, to whom he had inflicted a deep wound in the neck.

The monument is a good sized one, although it does not seem so, on account of being surrounded by the stately buildings of the Louvre. A group in stone represents Gambetta standing upright, in his familiar, energetic attitude, and showing to some soldiers around him where the genius of the Fatherland (half wrapt up in a flag and bending over him) orders them to march. The whole of the composition is full of life, and a strong feeling of the purest patriotism runs through it. On each side of the marble pedestal is a sitting figure in bronze, one personifying Force and the other one Truth. A column in the shape of an obelisk, on which are engraved the most stirring passages of Gambetta's speeches, rises behind the group and supports a bronze allegory of Democracy, being a woman with a dignified mien riding a winged lion of a rather fierce countenance. She holds in one hand a board on which are inscribed the Rights of the Citizens, and has a torch in the other. I must confess that the effect of this crowning piece, at a thorough Parisian point of view, appears somewhat strange and even slightly ludicrous. I should have preferred to see in its place a graceful and sober arrangement of well-known republican emblems, which would not have forced the attention at the expense of the main subject. I very much regret, too, that the secondary parts should be in bronze while the center piece is in stone, which is bound to weaken the intended effect of the composition. Those remarks being made, it must be admitted that Messrs. Aubé and Boileau deserve a high compliment for the talent they have displayed in executing that elaborate work of art.

The National *fete* has been this year as animated as usual. President Carnot's speech, addressed to the Mayors of all the towns in France, was unanimously welcomed. Those magistrates, who are, most of them, of very quiet habits, looked half proud and half bewildered as they took their share of that banquet to which the head authorities of France had invited them. They stared at the enormous yet unfinished building of the Exhibition, in which they were feasting, and, towards the end of the dinner, they all looked as though they felt awfully giddy, which might have led one to suppose that they imagined themselves to be on the very top of the Eiffel Tower, as it will be in 1889.

The Illuminations in the *Champs Elysées* were as successful as the previous years, and the balls in the streets more numerous. Cheap jewelry, chiefly consisting of birds, flowers and insects in stamped silver, polished or oxidized, was generally worn, not only by the work girls but even by the middle-class ladies and even a few grand ones, who had bought some for the occasion. Many girls, of a decided patriotic turn, wore brooches, being a trophy of tricolor flags in enamelled silver, and had pendant ear rings made of imitation stones showing the three national colors. Some pranced about with the once terrific red cap, which they wore coquettishly on one side. That glorious 14th of July and the ensuing night witnessed the exulting joy of many and many a thousand people who, for several months, had worked very hard in order to be able and afford a thorough spree. Foreigners and country people, who had come to Paris for the *fete*, stayed a whole week or more, and their presence in our place proved a blessing to most retailers.

Mr. E. Antoine, of the firm of Antoine frères, Besançon, has written to the *Revue Chronométrique* a long letter, in which he strongly advises the clock and watchmakers to petition in order to obtain, for the whole of France, an official time. He should like to see every public clock, from Dunkerque to Marseille, and from Brest to Nancy, regulated according to the Paris meridian. Mr. Antoine greatly envies Parisian people who, thanks to their pneumatic system, possess

the exact time even in the remotest thoroughfares, whereas the different clocks in a small town are very seldom seen to agree.

Now, it is well known that all the railway stations and telegraph offices in France (amounting to several thousand places distributed all over the territory) show the Paris Observatory time, which is given them by the earliest telegram sent from the capital every morning. We consequently think that very little need be done to satisfy Mr. Antoine; only we do not understand why this gentleman should desire to see the government interfere in the matter and even take compulsory measures concerning an official time.

The Meteorological Congress, which assembled some time ago at the *Ministère de l'Instruction Publique*, and was presided over by Mr. Mascart, agreed to propose that the several thousand clocks, showing actually the Paris time all over France, should be placed outside the buildings they belong to, so as to be seen at some distance; and they suggested, besides, that the difference in time according to the meridian of each place should be indicated in large letters on the wooden case of the clock. It is evident that nothing more can be done except by a decision of the town board in each place.

The judgment pronounced on the 28th of February last, by the 8^e *Chambre Correctionnelle*, against the importers and vendors of silver articles bearing forged old marks, has been cancelled by the *Cour d'Appel*, on the ground that the person who bought those goods knew perfectly that they were not what they assumed to be; consequently, the buyer had not been taken in, and there could be no application to that case of the Art. 405. This does not surprise us, as it is not, by far, the first instance in which justice has humbly declared herself powerless. Although we may deeply regret that our Code should contain no law applying to that kind of fraud, yet as this is fully acknowledged in the motives given for cancelling the judgment, those who have thus escaped punishment are sufficiently stigmatized for their habitual customers to be warned off.

The scepticism fully developed of late concerning real old silver will prevent for a long time ignorant amateurs from purchasing supposed-to-be-rare things. As regards the true connoisseurs, we know perfectly that they will not decide upon buying any bibilot, unless they have examined it thoroughly and tested it by all possible means of comparison. They have an accurate knowledge of the different marks which a piece of plate given as belonging to a certain year and made by a silversmith of such name ought to bear. Besides they will, at once, detect the fraud in the making, as evidently, a modern sugar basin, for instance, let the counterfeit be as cleverly managed as you like, will not be bent into shape and assembled in all its parts in exactly the same way as it should have been done a century or two ago; and the appearance of wear, that even a vessel never used must have after so many years, cannot be artificially obtained to a nicety.

The fashion of wearing watches is yielding more and more to fancy. I imagine that, very shortly, we shall see them worn as pendant ear rings, each one of the two showing a different time. One will say, for instance, to the long fretted about husband: "you are late"; while the other one could answer to a grumbling lord: "I am punctual."

I have seen some encased in scarabees made of gems framed in gold. You can see the time in moving up one of the wings.

Some bracelets represent a convict's chain in gold or platina, with a rather heavy and clumsy-looking padlock; the part being open will show either a portrait, or a tiny watch, or a worshipped curl.

The high novelty in plate is like a happy sketch of the Louis XV. style. For instance, a board will be ornamented with a chased run of foaming waves ebbing in and out, all round the brim, an over-rolling billow, on each side, forming a handle. Tea pots and coffee pots will show on their lower parts a surging, irregular design of the same description in *repoussé*. On the cover is stuck a curiously twisted shell resting on sea weeds. Handles are made of eels grace-

fully entwined, and spouts of projecting sea monsters, which owe something to nature and a great deal more to imagination.

Fashionable ladies who had enough courage to go to Trouville, Paramé, Dieppe and Boulogne, through hail and storm, pass away the time the best they can in showing their diamonds to the admiring eyes at the Casinos.

JASEUR.

* Old Plate.

CAUDLE CUPS AND PORRINGERS.



THESE two classes of vessels, the former of which were often called "posset" cups or "posnets," include all the two-handled cups with covers, and sometimes also trays or stands, that were so commonly used in the XVII. and the earlier part of the following century.

The former are somewhat pear-shaped, swelling into larger bowls at the base, and were used for drinking posset, which was milk curdled with wine and other additions, like white-wine whey or treacle poseets of our day. The curd floated above the liquor, and, rising into the narrow part of the cup, could be easily removed, leaving the clear fluid at the bottom. Their fashion differs with their date.

Porringers, on the other hand, were wider-mouthed bowls, but with covers and handles like the last. Their less flowing shape necessitated a somewhat different style of treatment in the way of decoration.



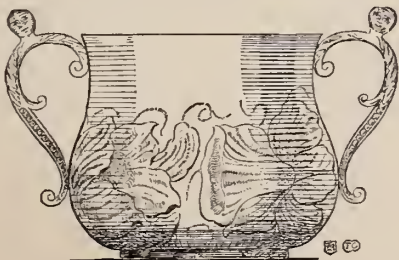
CUP AND COVER (1660); SOUTH KENSINGTON MUSEUM.

tion; and they are sometimes found in the middle of the century octagonal, or even twelve-sided, without any ornament.

A well-known pattern which came in about the time of the Restoration is shown in the illustration. It is from the collection at the South Kensington Museum, and is thus described in the official Catalogue:

"Cup and cover; silver-gilt plain neck, the lower part of the body beaten with leaf work; scroll handles and a cover with flat-top engraved with a coat of arms, English hall-mark, 1660 H. 6½ in. w. 7¾ in.

The upper part or neck is plain: the lower portion of the body bulges and is



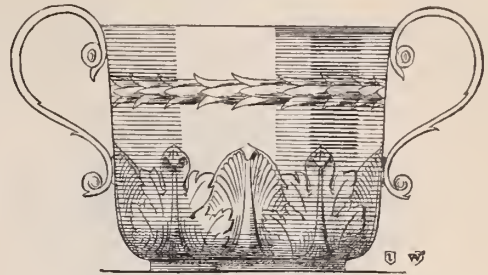
CUP (1667); FROM THE COLLECTION OF THE LATE MR. C. WYLLYS BETTS.

beaten up with tulip flowers and leaves. The handles join the rim of the neck and the bulging surface of the lower part of the body. The handles are light bold scrolls of solid metal, with terminal heads on the upper curves, curves at the upper

point or junction, and light double volutes at the lower. The cover bulges and is hammered up with the same tulip flower as the body. It is topped by a flat handle, which when reversed, stands as a foot, and this portion is then used as a small salver or waiter. On this flat surface is engraved an heraldic shield."

We here illustrate four cups of the year 1667, 1686, 1702 and 1775, from the collection of the late Mr. C. Wyllys Betts, bequeathed to the Scroll and Keys Society of Yale University.

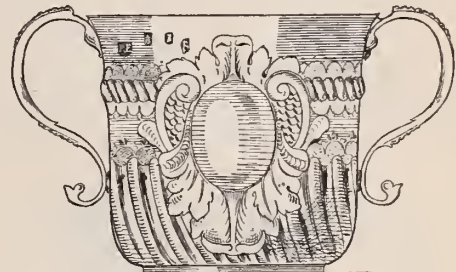
The cup dated 1667 is very likely the South Kensington specimen of 1660. That of 1686, with the acanthus decoration of *repoussé* work round the bowl, is of identically the same character as the cov-



(1686); FROM THE COLLECTION OF THE LATE MR. C. WYLLYS BETTS.

ered cup at Saddlers' Hall, London, the gift of Peter Rich, 1681. The two later cups (1702 and 1775) show the development of the fluted porringers of the reign of Queen Anne. These are often used as beer-cups.

Toward the end of the XVII. century, porringers are often decorated with flat *appliqué* leaves round the bottom of the bowl and the knob of the cover. These thin plates of metal, cut into various



(1702); FROM THE COLLECTION OF THE LATE MR. C. WYLLYS BETTS.

shapes and applied to the surface, have been called "cut-card" work, for want of a better name, and it has been somewhat generally adopted. The illustration is of very good specimen belonging to Christ Church, Bruton Parish Va., and used as a chalice. It is of silver-gilt (H. 3¾ in., w. 4¼ in.), and has the mark of Peeter Harache, † an eminent goldsmith and plate-worker of Suffolk street, Charing Cross, who emigrated from France after the revolution of



(1775); FROM THE COLLECTION OF THE LATE MR. C. WYLLYS BETTS.

the Edict of Nantes. The first time we meet with his mark is on the copper-plate at Goldsmiths Hall, between 1675 and 1697.

The mania for Chinese porcelain, which prevailed for a few years in the reign of William III., did not die out before the goldsmiths

* From Old Plate, Ecclesiastical, Decorative and Domestic. By J. H. Buck. Published by the Gorham Manufacturing Company.

† Chaffers.

had covered their wares with Chinese designs. A vast quantity of plate was decorated in this way between 1682 and 1690.

Last of all come the fluted porringers of the reign of Queen Anne, previously mentioned, of which it is necessary to say that, as they have much attracted the attention of collectors, imitations of them have been manufactured by the cart-load. These modern copies would very often be detected by an assay, for they are all marked as made of the Britannia standard of silver, and many of them if tested would no doubt prove to be of silver of lower quality.

TUMBLERS.

These useful articles have been rather pushed out of their place in the chapter by the necessity of classing together porringers and



CUP AND COVER (1686); CHRIST CHURCH, BRUTON PARISH, VA.

caudle cups, for they are decidedly more ancient than the last-mentioned class of porringers. They are so called because they will not lie on their sides, but will only rest on their bottom, tumbling or rolling from side to side like a tumbler till they steady themselves in an upright position. The name has somewhat improperly been transferred to our flat-bottomed drinking-glasses. Such round-bottomed cups are frequently met with from about 1670 onwards, and are still used in some of the English colleges for drinking beer. They are



CUP (1758); GORHAM MFG. CO.

sometimes called bowls, and being of different sizes, the larger ones were called beer-bowls, and the smaller wine-bowls, in old inventories.

PLATES.

Plates of silver or silver-gilt were used, both at dinner and at what is now called dessert. The dessert plates are the more common, though silver trenchers are sometimes mentioned. The "conceites after dinner," such as "appels, nuts or creame," were no doubt placed upon them.

Silver "spice-plates" occur in the inventories of the XIV. and XV. centuries.

Dinner-plates of silver, with shaped and gadrooned edges, are found commonly in the last, and sometimes of the preceding century, replacing the simple pewter of an earlier generation.

A New Process of Electroplating.

A PROCESS of electroplating flowers, insects, etc., and so preserving them, has been brought out in France. Copper, gold and silver are the chief metals electro-deposited, and the bodies are prepared to receive the coating in the following manner: A quantity of snails or slugs are washed in ordinary water to free them from all earthy or calcareous matter. They are then placed in a vessel containing distilled water, and are left in it a sufficient time to enable them to give off the albuminous matter they secrete. This matter is then filtered and boiled for about an hour. After boiling, a quantity of distilled water, sufficient to replace that lost by boiling, is added, with about 3 per cent. of nitrate of silver. This solution is then placed in bottles, which are sealed and kept in the dark. To use this liquid for the preparation of specimens to be electroplated, about 30 grains of it are dissolved in about 100 grains of distilled water, and the objects are immersed in this solution for a few moments. They are then placed in a bath consisting of distilled water with about 20 per cent of nitrate of silver in solution, and afterward submitted to the action of sulphuretted hydrogen gas, which decomposes the nitrate of silver adhering to the albumen-coated surface of the object. The silver reduced fits the object to receive the metallic deposit produced by galvano-plasty.

A Centered Cement Chuck.



IN A COMMUNICATION, says a correspondent, J. H. S., in a contemporary, I see that M. M., in regard to setting a pivot, says: "I do all this kind of work with bow and turns, and consider it the only correct way. While I agree with Mr. M. M. in his statement that there is some risk in relying on a split, drawing-in chuck, yet in three-fourths of the cases where inaccuracy occurs, it can be traced and attributed either to using a soft chuck and expecting it to hold drills, broaches and taps, and then to be in perfect shape to center a balance staff; or it may be that the chuck is too large, or a little too small for the staff, and the jaws only clutch it at the outside; or it may be on account of a poor working lathe—the purchaser expecting to get as good a machine for \$25 as he could for \$100.

Yet, admitting that there is a risk in using a steel chuck, what can be nearer to accuracy than a well centered cement chuck? I very often use a split chuck for a third or fourth wheel pivot, but I generally prefer a brass taper cement chuck for a balance staff or pivot.

My method is as smooth, to avoid being deceived in the center, then with a fine-pointed graver find the center, which I cut about as deep as the length of the pivot, using a strong glass. To test its accuracy, I take a long pin tongue, soften it, and set the pointed end in the female center just cut, holding the other end against the thumb of my right hand; then, by setting the rest close to the chuck, and holding a thin slip of peg-wood under the pointed end of the pin as it rests in the center, and revolving the lathe, the slightest error will be detected by the "wink" of the pin. After being assured of the accuracy of the center, I next apply the cement.

By the way, about one-sixteenth of an inch from the end of the taper, I have soldered a small piece of thin brass like a washer, which holds the cement better and requires less heat to soften it. The pivot of the staff is then set in the center, and the cement heated until it softens and flows around the staff, and then allowed to cool until it will hold the balance without dropping out. Set the lathe in motion, and turn the other end of the staff by holding a piece of peg-wood at rest under the old stump of the broken pivot or the next shoulder, the remaining part of the operation of drilling, setting plug and turning, is so well known to watchmakers that it need not be repeated here; it is generally done by them in a manner which I cannot improve upon, except by the cautionary suggestion

that the plug be fitted so it will drive tight with the end touching the bottom of the hole drilled.

A plug, when fitted, is of course a little tapering, and as the hole is the same size, when it is driven in it really binds only at the outside, which is the largest part; and for this reason, a pivot will sometimes work loose when it is being turned off, particularly if the hole is large, with little depth. This may sometimes be remedied by striking the small end of the plug lightly with the hammer, raising a slight burr on the end, and then driving it in as before."



[FROM OUR SPECIAL CORRESPONDENT.]

ROCHESTER, N. Y.

A person standing at the corner of State and Main streets, in Rochester, has a splendid view of the business portion of the city, as the four corners, as it is often called, is the head center of the city, and from this point the street cars diverge in every direction. Rochester is more than holding her own as against the other cities in the state in the way of business as well as in the erection of fine business blocks.

Where, outside of the city of New York, in the state, will you find an eleven-story business block such as stands on one of the corners of State and Main streets, just completed, and not only a great addition to the city of Rochester, but a suitable companion to the magnificent Powers block, that stands on the opposite corner, built by one of her most worthy citizens, Mr. D. W. Powers, and a citizen that Rochester may well be proud of. Not being satisfied with building this fine business block, he has erected adjoining, one of the finest fire-proof hotels that is to be found anywhere in this country, which is run by Buck & Sanger, and has long ago established itself as one of the leading hotels in the state. Mr. Powers is an extensive traveler, having plenty of wealth and an excellent art critic, which fact is established by his collection of oil paintings, water colors, etchings and statuary, which he has collected in the different parts of the world and has placed on exhibition in the two upper floors of the Powers block, for the benefit of the public at a trifling expense.

This gallery has gained already quite a reputation and is ranked among the first in the country, being composed of fifteen or more good sized rooms, one leading into the other, and each devoted to its special work of art, being beautifully lighted and neat and attractive in appearance.

The advantages of being centrally located are plainly shown in Rochester by the location of the eight leading retail jewelers, who are all within three hundred feet of the corner of State and Main streets.

The oldest established jewelry business in Rochester to-day is the location now occupied by L. Sunderlin & Co., No. 20 State street, corner of Exchange place. This house was established in 1826, by C. A. Burr, who sold out to Sunderlin & Weaver in 1864, and in 1869 it changed again to Sunderlin & McAllaster, and continued until 1879 when Mr. McAllaster withdrew and established the competing house of McAllaster, Humburch & Burke. The house of L. Sunderlin & Co. of to-day is composed of Mr. Lewis Sunderlin and his son Charles E. Sunderlin.

They have a handsome, well lighted store (20 feet front by 70 deep), finished in black walnut and are doing a good retail business.

They are direct importers of watches, French clocks, bronzes and optical goods. They sell the Patek, Phillippe & Co. watch for their fine watch.

Mr. Louis S. Kendall has full charge of the buying and the jewelry department, and Mr. J. G. Quick has charge of the watch department, Mr. Chas. E. Sunderlin looks after the finances, all being active young men but experienced in the business.

The next oldest established business is that of E. S. Ettenheimer & Co., who date back to 1849, when Mr. Ettenheimer established himself in the retail jewelry business, and I believe has remained there, faithfully attending to business until recently, when he retired from active business life, having accumulated a fortune from this jewelry business and his recent speculations in real estate. The firm to-day is composed of his late partners, Mr. William Miller, S. Louis Ettenheimer and Jacob Miller, No. 2 State street; they have a small store about 20 feet wide and 40 feet deep, finished in black walnut. It is a small store, but it has proven a mint for its occupants and if they are not doing the largest retail business of the city to-day, they are very close to it.

Mr. Miller is manager and Mr. S. Louis Ettenheimer attends to the finances and Mr. Jacob Miller is the traveler, as they do both a wholesale as well as a retail business I believe. They handle a Swiss watch with their own name on for their fine watch and are direct importers of diamonds, watches, French clocks, bronzes and music boxes. The first floor is reserved for the sale of diamonds, watches and jewelry, and in the basement you will see a fine display of silver, silver plated ware and clocks. They have been in the location for the past eighteen years.

At the death of Mr. Richard Burke, several years ago, the firm of McAllaster, Humburch & Burke changed to McAllaster & Humburch, No. 22 State street, where they are doing a very satisfactory business. They have a handsomely decorated store, well stocked with rich and elegant goods and very tastefully displayed. Both of these gentlemen have had about twenty years' experience in Rochester, are first-class salesmen and attend most thoroughly to the wants of their customers. They sell the Vacheron & Constantin watch for their fine watch and make their watch and diamond business their principal business, being direct importers. They make a fine display also of jewelry and fancy goods, silver and plated ware.

Mr. David Rosenberg, No. 15 State street, successor for the past year of the old established house of H. & D. Rosenberg, having been established in Rochester for the past thirty years, has a handsome store in the Powers block, about 18 feet front by 75 deep and looks more especially after the diamond and watch business. He also carries a general line of jewelry, silver and plated ware. This house has the agency for the celebrated Chas. E. Jacot watch.

The watch department is in charge of Mr. William M. Rebasz, who has had forty-seven years' experience and the last thirty years with this house. Mr. Rebasz has but few equals in this country and has a great local reputation as a musician and art critic, and at his home has a complete observatory for astronomical work.

E. B. Booth & Son, No. 9 State street. This house was established in 1838, by Mr. E. B. Booth, who died in June last, leaving his partner, a son, Henry G. Booth, who has been associated in business with his father for the past twenty-five years, and of late years has had full charge of the business. They have a pretty store, also in the Powers block, 22 by 60 feet and handsomely decorated. They sell the Borel and Courvoisier watch for their fine watch and the watch department is presided over by Mr. Chas. W. Oviatt, a gentleman of experience and extensive acquaintance in Rochester. They carry a general line of jewelry and silver, and import direct French clocks and bronzes and report a satisfactory business. The estate of Mr. E. B. Booth is to be settled shortly and the supposition is that Mr. Henry G. Booth will continue the business.

Mr. B. E. Brown, No. 24 State street. Mr. Brown established the house of Brown & Hammett in 1870, in the manufacturing and

repairing jewelry business, and continued until 1874, when Mr. Hammett retired. Since then Mr. Brown has increased his manufacturing business and also established a retail business. He has a handsome salesroom on the second floor adjoining his factory and is doing quite a satisfactory retail business. He is ably assisted by Mr. Frank Fullam, who is a salesman of considerable experience in Rochester. They make a specialty of ordered work, diamond mountings and badges of all descriptions.

Walters Bros., No. 14 East Main street, was established in 1863 by Mr. C. F. Walters, who died about eight years ago and his sons succeeded him in business. So the firm to-day is composed of Mr. C. F. & C. B. Walters. They have a very handsome store, finished throughout about one year ago with mahogany fixtures, which makes a beautiful contrast with the bright silver goods, and as they are young and energetic men, they are fast building up a satisfactory business. They handle both Swiss and American watches, a general line of jewelry and silver goods, and import direct clock and optical goods.

Mr. Moses Goodman, No. 7 State street, purchased the lease of Mr. Fox, a retired jeweler of Rochester, and re-stocked the store with new and desirable goods about two years ago, and reports a very satisfactory business so far. He was until two years ago head salesman for H. & D. Rosenberg, where he had twenty-three years' experience. Is a good salesman, a popular fellow and has a great many friends who wish him well.

HARD SOLDER.



A Lady's Rambles Among the Jewelers.

MARINE forms prevail in silverware designs.

OYSTER forks have oxidized handles with designs of sea weed in fine relief, and trident prongs in silver gilt.

BON-BON trays affect the grotesque; an ape standing on a twisted trunk, is one of the most conspicuous designs.

HUNTING flasks have a huntsman mounted and leaping a ditch engraved on one side.

PRAYER books are mounted in silver with appropriate designs. On one are passion flowers in *repoussé* work. Another has the baptism of Christ in niello.

POWDER boxes of cut-glass with *repoussé* silver covers are the prettiest shown.

RIDING whips are the fantasies of the moment. The body is made very light and the heads are in silver or in silver mingled with ivory. When ivory is used, the treatment is Japanese and the handle is a hollow globe of perforated silver. When the handle is of silver, swirling forms relieved against a black background are the favorite design.

A CURIOUS brooch is a slightly concave circle; the ground is black and sprinkled with stars, a tiny balloon in white enamels is seen on one side.

A NOVELTY in a timepiece is a silver dog. The clock is set in his

side, and a red tongue wagging in his open mouth and his tail tick off the seconds.

THE MATRIX of an opal which is known as opaline, makes an interesting pendant. The piece is left in its irregular state and on one face a man's head with black beard is carved. The stone is closely set with diamonds.

BRACELETS composed of pieces of richly chiseled gold show something of the beauty of the goldsmith's art. Over the wrist rubies, sapphires and diamonds are set in the center of these pieces.

HAIR pins offer the widest diversity for ornamentation. Shell pins have their rounded and expanding tops covered with richly wrought gold and silver having the effect of increasing and decreasing spirals. Others preserve straight lines, the cross bar being slightly oblique and set with turquoises.

A RARE pendant is a large pear-shaped Persian turquoise with vine and leaves in intaglio. The modern work consists in re-gilding the ornament and surrounding it with thickly-set diamonds.

A MAGNIFICENT and artistic ornament is the head of Marie de Medici, cut out of brown topaz. Her ruff and bodice are made of diamonds; on the queenly head is a gold crown set with diamonds.

PINS of colored stones have the merit of becomingness. Here is one for blondes: Pink topaz, brown topaz, aquamarine and jacinth set between delicate leaves. The jacinth has a carved head in low relief.

AN EXQUISITE ornament has for its center a large pink topaz. This is surrounded by diamonds in rayed and waving forms.

A BROOCH unusual in design and fine in workmanship is a flying cupid modelled in gold and holding a garland of roses. The garland and the wings of the boy are made of small diamonds.

BROOCHES, with centers of enamels portraying mythological scenes and exquisitely painted, are set in renaissance designs of garlands and flowing forms composed of gold and diamonds. The effect is that of a picture and its frame.

THE edelweiss, with its thick, furry petals, and with centers of pearls, is the latest flower brooch. The texture is marvelously represented in white enamel.

YACHTING flasks are unmistakeable. In one case a net has caught inside, a crab, sea weed and other sea fruit. On another, two toads are standing up in humorous discussion.

CUT-glass vinaigrettes have tops of beaten gold in which diamonds are buried here and there.

FOR summer toilets, brooches of white enamel in slender interlacing forms and sprinkled with diamonds are introduced.

A CURIOUS pendant is a scoop net of fine, twisted gold, with a small diamond set at each intersection. The net has caught a fish that is brilliant with dyes of green and gold. The fish has a phenomenal mouth which is wide open and about to seize upon a large diamond.

SILVER shoe horns are adorned at one end with daisies relieved against a dark background.

YELLOW buttercups with diamond centers are intended to be worn with light, fluffy, summer costumes.

AN ENAMEL brooch has on it a sleeping cupid. Above him is a bow of diamonds, and hovering above the bow, a cloud of nymphs. The painting is set in an elaborate framework of beaten gold leaves and flowers of diamonds.

A NECKLACE made of large, imperfect pearls, each set in a frame

work of chiseled gold, is one form in which the present desire for pearls is seen.

A LARGE octopus in oxidized silver, repulsive with shining warts, makes a curious chatelaine.

THE present vogue for pearls has brought out necklaces of small pearls resembling somewhat those worn long ago.

SMALL forms in necklaces are more becoming than large. A beautiful necklace is a closely set band of rather small diamonds with tiny, shaped links, from each of which hangs a diamond, suspended from the band in close succession.

A LARGE carnation of salmon-colored enamel striped with pink, with a large diamond on one of the petals to simulate a dew drop, is a brooch that suggests a costume for so splendid and artistic an ornament.

SPRAYS of white lilacs with a tiny diamond sparkling in each flower are among the prettiest of the flower brooches.

TORTOISE shell and diamonds are combined in brooches. The shell is cut in perforated interlacing forms and a small diamond is buried in the prominent intersections.

FOR half mourning are pansies of lusterless black enamel with a diamond center.

PERSIAN enamel is coming into general use. Samples of its use are in brooches, the mounting of pocketbooks and portfolios, and ornamenting fruit services of silver gilt.

FAC-SIMILES of old coins, made slightly concave, and with long twisted handles surmounted by a tiny figure, are intended for bon-bon spoons.

BON-BON trays, shaped like a shallow bowl of oxidized silver with set flowers of deep red enamel, are popular styles.

THERE is no end to the silver articles that have for their only ornamentation waving, fluted forms.

ONE of the campaign badges is a button enclosing a map in enamel. The geographical divisions are Canada, Mexico, and between them the United States, under the name of "Cleve-Land."

LINKED sleeve buttons are seen resembling coupled coffee beans. Only one will be silver, the other a copper tint, a third of gold, a fourth oxidized silver.

AMBER cigar holders are wound with strips of silver.

FOR TABLE ware the prettiest articles are silver and cut-glass in combination. A claret jug for example will be of cut-glass with bands, handle and base of *repoussé* silver.

THE SEMBLANCE of a flask is given to watches although circular in form by leaving the upper part highly burnished, and chiseling the cup part in flowers and foliage.

SHORT watch chains and balls respond to various fancies. One is a linked chain to which is attached a gold bucket. In another the ball is the section of a stump of a tree to which an enameled flower clings. The chain is a garland of forget-me-nots and gold.

PERFORATED balls made of blue enameled forget-me-nots with a daisy at the base are attached to short chains.

INTERLACING of gold ropes which are carved to the last extent of richness, are used in jewelry of every description.

SMALL shell combs have mounts of interlaced gold in many beautiful forms. Diamonds, rubies and sapphires bestrew them.

BROOCHES shaped like folded napkins and in square plaits, have one plait encrusted with enamels and the other chiseled.

DELICATE enameling in fine petalled flowers adorn the gold knots that serve as brooches.

GARTER clasps are of beaten gold with enameled ornament.

EAR RINGS in the form of stirrups, one side set with diamonds, the other with sapphires are a novelty.

AN UNIQUE baby rattle is a harlequin head and bells attached to an ivory ring.

THE DIRECTOIRE mania has brought out in England an old-fashioned gold chain to hold watch, fan and ball programme. It is divided into three ends finished with either a heart-shaped locket, a tassel or fastener for any object which a lady may wish to carry.

THERE is a watchmaker in Saxony, Karl Muth by name, who sends to notable people a sort of locket he makes out of the pfennig pieces which are about two-thirds the size of a copper cent. In the locket he places the portrait of the person he desires to honor. President Cleveland is the latest recipient.

SPECTACLE cases of silver-gilt ornamented with Moorish designs in colored enamels, are both light and handsome.

SHAVING cups and silver-mounted brushes are of oxidized silver with swirls as ornament, or are polished and fluted in Queen Anne styles. It seems that something very significant might be done in this way as has been done in flasks.

THE "swirls" that appear so prominently on so much silverware from umbrella handles to coffee pots and yachting prizes, appear to be suggested by Mr. Elihu Vedder's illustrations of the "Rubaiyat" of Omer Khayam, in which this particular form of ornamentation played an important part. The word "swirl" was at that time again introduced into literature, and has since been the fashion.

THIS year particularly lends itself to the rope interlacing of gold and silver that is now in vogue. 1888 accordingly appears in brooches, buttons, the ornament of bracelets, and in various other ways.

GOLD fish-bones on which a bird beautifully chased in gold is perched encrusted with enamels or set in pearls and diamonds, are designed for bridesmaids and called "The Merry Thought."

KNIFE setting, where but few stones are used, still prevails, and for reason, as stones are much more becoming thus set.

EVERYTHING should be done to keep silver mounted brushes, combs and hand glasses light. The handles could often spare some of the ornamentation and be more agreeable to hold.

THE NECKLACE worn by the Princess of Wales in one of her most admired photographs is frequently copied. It consists of a close band about the neck of seven rows of pearls with no pendants.

MOONSTONES are combined with enamel in jewelry.

A BROOCH of aquamarine with a carved head in low relief is set with small diamonds and opals, leaving a small interval between each stone. Such a brooch is dazzling when worn by a blonde in white.

FOUR-leaved clovers reproduced in green enamel are among the most artistic specimens of this beautiful art. A diamond is usually placed in the center of these clover brooches.

CIGARETTE holders have mouth-pieces of amber fitted into small gold pipes of Roman gold adorned with enamels. Another design is a hollow log with vines and flowers of enamel.

AN AQUAMARINE cut into a head and surmounted by a jockey's cap in white enamel and diamonds, makes a gentleman's scarfpin.

WHITE enamel tracery combines with precious stones in the most tasteful and unpretentious of the brooches of the season. One of

these has for the center a large square emerald; surrounding it are spray-like forms of white enamel enclosing a diamond, diamonds in turn enclosing these. But in some brooches the enamel tracery is more prominent than the stones. Such show framework of fine tracery sprinkled with small sapphires.

LACE pins formed of tiny ivory miniatures set with diamonds are among the daintiest things in jewelry.

A LIGHT shell hair pin has an enameled snake with a diamond eye wound around the top.

ONYX is given a dead finish for mourning.

POUCHES of fine gold network are used by luxurious people instead of pocketbooks, whether clasps or slides are used. They are of Roman gold adorned with enamel or with a few jewels.

A FOLDING corkscrew has a flat handle of oxidized silver on which is a boxer in position.

SILVER clasps for garters have the ornament in flat tracery.

GOLD vinaigrettes are pointed and slightly curved. One has a slightly incised ornament—a vine with leaves and flowers in gold, with the ground covered with red enamel. Another is of Roman gold with raised flowers in red enamel.

JARDINIERS for the table are low with flaring borders of *repousse* ornament. They are intended to be filled with moss and have ferns and fine froud like foliage standing in the center. Other style shave perforated borders finished with an edge of solid raised ornament.

SILVER fruit dishes are in the shape of low bowls and are generally round, although some oval and flaring forms are seen with waving fluted ornament. These bowls have sometimes bulging sides but they are usually straight and have a band-like effect. This band is enriched with *repousse* ornament, designs in outline and polished against an oxidized background, and ornament modeled in relief and applied. Some beautiful designs of this kind are seen in which chrysanthemums with detached petals are carefully drawn from nature. The sugar bowl and creamer usually accompany them, and they are all luxuriously encased.

SILVER salad bowls are plainly distinguishable by their ornament. They are more irregular in form than fruit bowls. The edges are curving and crumpled in leaf-like suggestions. Crabs, sea weed and bits of net enclosing shells and marine forms are among the designs. One of the most striking examples had a wide band formed of oyster, muscle and other shells combined solidly, and copying nature exactly in form, tint and even in its imperfections. This band was modeled in high relief against a deep-hued oxidized ground, and here there were bits of iridescent sea weed. This was a work of art. Other bowls have marine animals in relief and applied.

ALL kinds of fantasies are introduced in sugar tongs. One of the most novel is in the form of frogs' legs joined to the fat, round body as a handle. No one has ever yet imitated the human hand, which is not unaccustomed to grasping securely.

SYRUP jugs with bulging glass bodies in waving flutes have every other form cut in floral designs and are mounted with *repousse* silver mouths.

BABY rattles are taken from Mother Goose. "Silver bells and cockle shells" is the legend engraved on a rattle carrying out the design. "Pussy cat, pussy cat, where have you been?" represents a traveling cat chased on a jingling ball.

AN UNIQUE coffee set has an egg-shaped body divided into bands of chiseled ornament against a plain oxidized surface that is almost black. The handle is bound in rattan; the creamer and bowl are in sturdy, straight forms with the same ornamentation.

A SUPERB set of knives with carvers have oxidized silver handles

richly wrought, dark in color, and curved in order to be adapted to the hand.

A CASE of knives and forks have handles in which a spray of lillies of the valley against the leaf makes the handles.

A CHILD'S knife, fork and spoon set has handles copied from the old Apostle spoons.

IVORY salad spoons and forks are elaborately carved and stained very dark.

THE bowls of spoons receive a good deal of ornamentation. Wart-like marine forms, crabs and flowers, are found hammered in spoon bowls; others have crumpled edges. The bit of net enclosing sea weed and shells is the favorite design of the season. Large salad spoons are ornamented with it.

ELSIE BEE.



LONDON, August 9, 1888.

My monthly contributions to your columns is always a pleasure—always a difficulty. It is a pleasure because I feel much more freedom than I do when writing for an exclusive class journal here, and a difficulty, because there is so much to write about and so little space in which to write it, that I generally find some matter of interest crowded out. To deal with general matters first, I find that there is a greatly improved feeling throughout our jewelry trades and its branches—not altogether because there has been any great improvement in the amount of trade done, but principally because it is admitted on all sides that the business transacted has been safer. The amount of risk that has for so long been inseparable from the manufacturers' trade has been most depressing. Makers have been obliged to take risks altogether out of proportion to their profits. The decrease in the amount of business done by many firms, is more than compensated by the decrease in the risk incurred. One of the most satisfactory features about the present condition of our trades is the restored confidence which is seen. The severe times through which the jewelry trades more than any others have passed, have been full of wholesome lessons to all concerned. Diligent managers and foremen, with more ambition than money, have been taught the folly of attempting to start manufactories in opposition to the principals who have treated them liberally, whom they have satisfactorily served. Some of these would-be masters, having lost the little money they had saved, have wisely gone back to their former positions. But others unhappily have done so much mischief by their foolish and thoughtless venture, that they find their former occupations and also their former employers—closed. I am convinced that the greater part of the trouble experienced in our trade during the past few years may be attributed to the futile attempts of persons with a very limited capital, to usurp the positions of manufacturers who have acquired such positions by the investment of a large amount of money and the application of many years of experience. Many of these "little men" have gone, and there is no doubt business will be healthier and in time brisker by their removal. There has not yet been that amount of improvement in our trade that is clearly seen in the general trade of the country and it is also remarkable that the greatest depression is seen in those districts that used to be the most flourishing. This is a very wide subject—too wide to be more than referred to here. Look at Coventry—once the greatest center of our watchmaking industry. The town itself is as busy as ever and I

am told that many of the same men who were formerly engaged there, are engaged there still—but in the manufacture of sewing machines and the ever increasing variety of cycles ! The revival of the jewelry trade is much more apparent than that of the watchmaking trade. Strong efforts are being made to restore the English watch trade, but the American and Swiss makers have obtained a firm footing here. The Merchandise Marks Act will do much good ultimately to this trade, but we must wait for it. The London Watchmakers' Trade Association has recently published a circular defending this act from complaints that have been made against it and expressing the opinion that "it will not be long after trade revives before the benefit of the act will be felt by all watchmakers." The Coventry Watch Trade Association have found it necessary to issue a circular headed "Caution" and warning manufacturers that any infringement of the recent act that comes under their notice will be followed by a prosecution.

I have not seen many factories since my last, but I have seen some good displays in retail houses, some of them of a most interesting character. Among these is the well known establishment of Fattarini Bros., at Bradford. Those unacquainted with this enterprising firm will be surprised to find such a collection as their's in a provincial town.

I have had an opportunity of looking over some of the best warehouses in Manchester, Leeds and Bradford, and have been much interested. The displays they make are essentially different from those in London, though the choice specialties are much the same. For instance, I saw a very handsome brooch, made of three crescents nicely entwined. The center crescent was set with diamonds and a splendid pearl, while the right and left crescents are set with rubies and emeralds. This is a very elegant ornament. A good display is made of fruit dishes, desserts and salad bowls, and I am told the demand for them has been good and continues so. There are some novel designs, chiefly in fine Staffordshire ware, neatly mounted in light silver work. Not only is the inside display of some of our provincial shops in exceedingly good taste, but their window dressing is very good. I like to see a well arranged window. It is a great key to a good trade. I have had a brief sight of the splendid diamond and pearl necklace and earrings subscribed for by the women of Great Britain and Ireland and recently presented to the Queen in remembrance of Her Majesty's jubilee. It is a handsome present. The articles were manufactured by Carrington & Smith and are highly creditable to them.

I had intended to give you a few notes on the jewelry, etc., in the Glasgow International Exhibition, from which I have just returned. I find, however, that my space is filled, so I must postpone them. I will, however, send them on in a day or two so that they may be distinct from my next letter.

VIGILANT.

Birmingham Letter.

[FROM OUR SPECIAL CORRESPONDENT.]

BIRMINGHAM, August 15, 1888.

It is generally said that an Englishman is never happy unless he has something to grumble about, and certainly we in the jewelry trade have had quite a good cause for grumbling during the past two months, for just as the seaside trade should be opening and some good orders coming in for pebble jewelry, the weather turns bad, and after raining almost without ceasing for three weeks, we get a northeast wind, the temperature almost at freezing point, and on July 12 and 13 snow in all parts of the country. The result is that trade in agricultural districts and seaside resorts is at a complete standstill.

The fashion for wearing of cuffs by ladies, which commenced about twelve months since, is slowly on the increase. Whenever this

fashion has been in vogue previously, ladies have almost invariably worn very large solitaires, about 25 mm. diameter, but this time, in the majority of cases, links are worn, and where solitaires are used they are very small and neat, usually about 10 mm. diameter.

The makers of solitaires for English wear have from time immemorial been considerably hampered in design through the custom of wearing none but round solitaires, but there is now a tendency to accept other shapes and makers are eager in fostering the tendency by making a large variety of designs in ovals, squares, octagons and many other shapes which cannot be described in a few words.

In links there is the same tendency—whereas a few years ago all links must be oval in shape and either plain or neatly engraved. We now get torpedoes, dumb-bell and other fancy shapes, the height of fashion being to wear the one-half of the link dumb-bell shape and of 18-kt. gold, and the other half torpedo and made of platinum. In the cheaper class of links, such as silver or plated, the octagon, hexagon, or an oblong with just the corners cut off and polished bright, are the most salable patterns.

Ten years ago, had you suggested to a retail jeweler dealing in the best class of goods, that he might increase his trade by adding some high class goods that cannot exactly be called jewelry, he would have thought you were insulting him, but the trying times through which the trade has passed have taught it many lessons, and now you see a variety of articles generally classed as "fancy goods" in all jewelers' shops, with the exception of a few in the centers of the largest towns. One of the principal causes of this change has been the fashion for wearing silver, which was in vogue a few years since. As these goods did not require a large capital many of the large drapery establishments kept a stock; especially was this the case with the gentlemen hosiers. In addition to this a class of shops has sprung up where cheap silver jewelry, Waterbury watches and Seth Thomas clocks are sold, all taking away some of the jewelers' legitimate trade.

This has made the retail jeweler look round for other goods, and now you see in their windows some fancy goods; lately majolica, cream jugs and sugar basins have been in all windows. These are usually of a French gray or buff color, very highly glazed and finished, mounted with silver rims round the top and base, and in the case of cream jugs, an ornamental mount on the handles. In addition to these some jewelers are now keeping best quality of sun shades. These are usually of such a length in the handle that they answer the double purpose of walking stick and sun shade, the stick having a richly chased silver handle and also a silver ring or ferrule round it where the ends of the ribs touch the handle when closed.

Watch bracelets are very fashionable, especially for seaside wear; these are usually straps made of lizard or some fancy skin, and are wide enough in the center to take a lady's watch, leaving a well protected hole for the time to be seen through and tapering into a strap of half-inch in width. These are very nice to wear when boating or touring, as they do away with the inconvenience of a watch chain, which is liable to catch everything, and the watch is so well protected that a blow will not hurt it, and in case of rowing or any exercise requiring strength in the wrists, the strap can be tightened so as to form a support.

Lace pins are another fashionable article for ladies' wear; these have the usual nursery safety pin with a small, pretty ornament on top of it. In best quality goods it takes the form of a single stone set in a claw, and from this degenerates until we get it in silver in the form of a round scalloped ornament on the safety pin.

As the fashion for silver goods is dying out we are rapidly running back into the old fashions of either plated or good gold goods. This is especially noticeable in chains, whereas two years since the makers of silver charms were working all hours. At the present time silver charms can be bought for near cost price, and there are very few sold at that. This naturally affects the sale of silver seals and compasses; in fact, these both in silver and gold are rapidly

going out of fashion and seem as though, like locket, they would soon be completely gone.

The jewelry trade already shows signs of the approach of winter in the larger orders that are being given out and the more numerous inquiries for new goods. At present this is most noticeable with houses that ship goods to the Australian colonies, as most of them are filling indents for Christmas trade, this being always well anticipated as there is a large quantity of jewelry given away as presents.

There is a very ingenious little article now being made by some jewelers, this is a pipe lighter. It is usually made of silver in the form of two tubes lying side by side. Through the one runs a soft piece of wick, similar to a circular lamp wick, but prepared in such a manner that it will never break out into a flame, but only smoulder. In the other tube is a bottle of sodium amalgam and it is arranged in such a manner that a piece of wire can be dipped in the bottle and when rubbed across the wick causes it to smoulder. The principal advantage it possesses as a pipe lighter is that it is not affected by wind or rain; in fact, if the wick is slightly damp it lights more easily.

Another novelty just out is a new cuff button. The back of this has two hinged arms which are in the same straight lines as the stem when put in the cuff, but when in a slight turn of the top causes them to shut down at right angles to the stem. In order to explain this better I will endeavor to send you some electrotypes of it next month.

Silver photo and mirror frames are now very fashionable here. They are usually made of fine work, after the style of filigree work, but not so elaborate, usually threaded into various shapes—diamond shape and the various other shapes similar which plaiting will make, with a Marguerite or similar floral ornament at the corner.

There is also now a special run on glass scent bottles; it seems as if our ladies had but recently discovered how useful a small scent bottle carried in the pocket very often is. These are sold in a multitude of styles; many of them are foreign made bottles with English silver tops; so long as the bottles do not look too much like foreign goods these are bought, but fortunately the nation has of late years developed a dislike for any goods having a trashy German look about them. Many of the bottles are really very beautiful, having a French gray colored ground with a floral design on them in very rich colors; others are all one color, usually a bright blue or green; others are the white glass, cut to look like crystals. These can be bought with silver Hall-marked tops at from 1/- to 10/- or more each; the very cheap ones are, of course, quite plain bottles with a very thin top.

Our Assay Office have made themselves look rather foolish this last week. They prosecuted Joseph Stainton for transferring the Hall mark from some ear rings to some brooches. The case was sent from our police court to the Assizes, where, in cross examination, the Master of Assay acknowledged that the brooches to which the mark was transferred were only two dwts. worse than standard silver at the soldering places, and the remainder was up to the standard; also the utmost profit defendant could make on this was 4d on sixty brooches. The judge, therefore, decided that there was no intention to defraud, but that as defendant had broken one of the rules of the Assay Office he must promise not to again transpose an assay mark. This the defendant readily did and so the case was dismissed.

SOLITAIRE.

THE SILVER TONED BELL.—“I once asked a foreman in a well-known bell foundry,” says a correspondent, “whether putting silver in a melting pot was an advantage.” He replied, “of great advantage—to the founder, as the silver sinks to the bottom; the founder pours off the copper and tin, and when the silver has cooled, puts it in his pocket.”



The following list of patents relating to the jewelry interests, granted by the U. S. Patent Office during the past month, is especially reported to THE JEWELERS' CIRCULAR by FRANKLIN H. HOUGH, Solicitor of American and Foreign Patents, 925 F Street, N. W., rear U. S. Patent Office, Washington, D. C. Copies of patents furnished for 25 cents each.

Issue of July 31, 1888.

18,488—DESIGN for Timepiece Characters. Rufus B. Carr, Boston, Mass., Assignor of one-half to The E. Howard Watch and Clock Co., same place.

18,490—DESIGN for Spoon or Fork Handle. Austin F. Jackson, Taunton, Mass., Assignor to The Reed & Barton Corporation, same place.

386,799—Eye-Glasses. John Bowles, Washington, D. C., Assignor of one-fourth to Joseph R. Edson, same place.

387,005—Calendar Clock. Peter F. Nilson, Phoenix, Ariz.

387,011—Watch Case Pendant. Frederick W. Schimmel, Murray, Idaho.

Issue of August 7, 1888.

18,511—DESIGN for Badge. Hiram Howard, Providence, R. I.

18,512—DESIGN for Badge. Steven C. Howard, Providence, R. I.

387,247—Balance Staff for Watches. Charles Morlet, Hoboken, N. J.

387,276—Electric Clock Synchronizer. Arthur G. Wiseman, St. Louis, Mo.

387,306—Stem Winding and Setting Watch. Abraham L. Keller, Springfield, Mass.

387,321—Watch Case. George C. Smith, New York, N. Y.

387,449—Crown Setting for Jewelry. Nathaniel L. Ripley, Newton, Assignor to the Ripley-Howland Mfg. Co., Boston, Mass.

387,469—Arbor for Clocks, Watches, etc. William N. Weeden, New Bedford, Mass., Assignor to the Weeden Mfg. Co., same place.

387,470—Means for Making Pinions for Clocks and Watches. William N. Weeden, New Bedford, Mass., Assignor to the Weeden Mfg. Co., same place.

387,471—Pin for Clocks, Watches, etc. William N. Weeden, New Bedford, Mass., Assignor to the Weeden Mfg. Co., same place.

387,472—Method of Making Pinions for Clocks and Watches. William N. Weeden, New Bedford, Mass., Assignor to the Weeden Mfg. Co., same place.

387,548—Method of Making Arbors for Clocks and Watches. William N. Weeden, New Bedford, Mass., Assignor to the Weeden Mfg. Co., same place.

387,567—Compensation Watch Balance. Augustus F. Pickert, Atlanta, Ga.

Issue of August 14, 1888.

18,532 and 18,533—DESIGN for Watch Case or Locket. Harlan S. Noyes, Brooklyn, N. Y.

15,766—TRADE MARK for Spectacles and Eye-Glasses. Ernest S. Fowler, Chicago, Ill. “The representation of a forearm and closed hand, the hand grasping numerous bolts of lightning.”

387,644—Mold for Casting the Teeth of Diamond Saws. Thaddeus A. Jackson, New York, N. Y.

387,703—Circuit Closer for Electric Clocks. Chas. D. Warner, Ansonia, Assignor to the Standard Electric Time Co., New Haven, Conn.

387,704—Electric Clock System. Chas. D. Warner, Ansonia, and

Arthur D. Bennett, New Haven, Assignors to the Standard Electric Time Co., New Haven, Conn.

387,885—Marbleizing Wood. William S. Ingraham, Bristol, Conn., Assignor to the E. Ingraham Co., same place.

387,973—Watch Balance. Charles K. Giles, Chicago, Ill.

387,974—Electric Clock Synchronizing System. Chas. J. Hexamer, Philadelphia, Pa., Assignor to the Philadelphia Time Telegraph Co., same place.

387,977—Marbleized Wood. Wm. S. Ingraham, Bristol, Conn., Assignor to the E. Ingraham Co., same place.

387,986—Mold for Casting Teeth of Diamond Saws. Willard F. Myer, New York, N. Y., Assignor to David Tulloch, same place.

Issue of August 21, 1888.

18,540—DESIGN for CANE HEAD. Jacob Eichel, Evansville, Ind.

388,036—Watch. Henning Hammarlund, Chicago, Ill.

388,145—Metalic Alloy. Heinrich Ostermann and Charles Lacroix, Geneva, Switzerland, Assignors to the Usine Genevoise de Dégrossissage d'Or, same place.

388,146—Metalic Alloy. Heinrich Ostermann and Charles Lacroix, Geneva, Switzerland, Assignors to the Usine Genevoise de Dégrossissage d'Or, same place.

388,147—Metalic Alloy. Heinrich Ostermann and Charles Lacroix, Geneva, Switzerland, Assignors to the Usine Genevoise de Dégrossissage d'Or, same place.

388,152—Non-Magnetic Alloy. Alfred H. Robert, Ponts Martel, Switzerland, Assignor to C. Huguenin-Thiébaud & Fils, same place.

388,157—Watch Case Spring. Charles Teske, Hartford, Conn.

388,186—Stem Winding and Setting Watch. Jules Duplain, Montreal, Quebec, Canada.



[FROM OUR SPECIAL CORRESPONDENT.]

PHILADELPHIA, August 19, 1888.

Early closing and Saturday half-holiday comes to an end in the jewelry trade in this city with the closing of the month of August, and the jobbers and wholesalers are preparing to enter upon a vigorous business campaign, despite the fact the political excitement will soon be in its zenith. Nearly all Philadelphia is Republican in politics and the jewelers are no exception. Like good partisans, they are sure their side will be the winner, and that the best interests of the country will be served by turning out the Democracy. Even the jewelers here who are Democrats are advocates of protection, and they all, of both parties, believe that free trade, or any approach to it, would ruin their business. They are serene in the belief, however, that protection will be the ruling policy of the government for the next four years, and are sending out their men to prospect for the fall trade.

The Atkinson Brothers are turning out about one hundred and fifty movements a day at their Keystone factory in Lancaster, and expect to find a ready sale for all they can make, and Mr. David F. Conover, of D. F. Conover & Co., says all their salesmen are out now, and that the outlook from their reports is more than encouraging. Simons Bro. & Co. are expecting a generous fall trade, and are making extensive preparations to handle an expected boom in their business in the South and West. The National Watch Case Company is making a specialty, in addition to their timepieces, of the manufacture of seamless gold rings by a patent process for which

they find a ready and profitable market. W. H. Sheaffer & Co., through the manager of the firm, Mr. W. H. Bingham, report dull business, but nothing can convince this house of the necessity of lowering the grade of its goods, which is of the highest. Mr. Bingham is sanguine of improved trade in the very near future.

Hagstoz and the Hollinsheds are making ready to push their wares and expect to be in line with the procession, while L. A. Scherr & Co. propose to seize every advantage presented by the situation.

The factory of business of Mr. Joseph Muhr, at Broad and Race streets, will shortly be sold out by the trustees of his estate recently appointed by the courts in the lunacy proceedings instituted in the matter of his possessions. There is some hope that Mr. Muhr may recover his reason and his health, although his condition at present is said to be very serious.

The move of the Trenton Watch Company to do business direct with the retailers and ignore the jobbers is, of course, not admired by the latter in this city. They are prophesying all sorts of dire calamities for the company, and, truth to tell, the retailers are not sanguine that the scheme will result in a brilliant success for the New Jersey concern. Certain it is that the local jobbers will do all in their power to break up the company's business here, even to the extent of underselling it with goods of other manufacture if such a course is found necessary.

The store on Chestnut street formerly occupied by Mr. I. Bedichimer is now a novelty and jewelry establishment, with George Eakins & Son in command.

Mr. D. F. Conover is now domiciled at the Wissahicken Inn with his family. He came up from Long Branch ten days ago.

There was no base ball game between the rival jewelers' nines this year, probably on account of the death of Fred Peiffer, who was captain of last year's champion team.

Mr. Simon Muhr is spending the waning days of the summer season at Bedford Springs.

Mr. William Davis, manager of Simons Bro.'s watch department, spent his two weeks' vacation cruising on his yacht. He had a delightful yet restful time.

The Philadelphia Optical Company proposes this year to make special exertions looking to the extension of their trade in the South. To this end they have engaged Mr. Charles Trewin, whose part connection with the company established his status as a first-class man, and he will act as the company's salesman in that locality. Mayer says the optical business is looking up, and that it never has been so well sustained in the summer season as it has in the past two months. In this he is corroborated by the Zineman's who are positive that this fall, after the presidential election is over, will be the time for them to establish their contemplated branch houses in Chicago and San Francisco.

Bailey, Banks & Biddle's principal lapidary only started on his vacation the other day. He was so busy working with diamonds that his holiday was delayed. Notwithstanding summer dullness, the retail trade at this house and J. E. Caldwell & Co.'s has been remarkable, considering that most of their patrons are out of town. PENN.

To Clean Dirt Wheels, Pivot Holes, etc.

THE REPAIRER gets occasionally a very dirty clock to clean, which looks as if its case had been made the dust pit for the storage of the house cleanings. When he has a clock of that kind before him, we would recommend the method of Mr. B. Morgossy, of Neusatz. He says: "I clean the very dirty wheels, pivot holes, chains, etc., of Black-Forest clocks for many years in the following manner: I put a certain quantity of benzine in a square or round tin box with joint, lay the wheels, etc., in, and leave them in for

about ten or fifteen minutes. They are then taken out, and with a clean, stiff brush, brushed thoroughly; the operator must take care, however, not to come near to an open light, as the benzine will ignite easily.

The wheels, frame, chain, etc., can also be cleaned in another manner. The brush is dipped in benzine and used for brushing the wheels, etc., by which they become very clean. The pivot holes can quickly be cleaned with a cord, which is fastened in the vise, drawn through the hole, and then a few motions up and down will clean the latter. The brass chains are cleaned with vinegar and a spoonful of salt; they are rubbed between the hands until perfectly clean, after which they are laid in clean water, rubbed well, and dried with a clean rag."



[FROM OUR SPECIAL CORRESPONDENT.]

CHICAGO, August 20, 1888.

Chicago's summer quiet has not as yet been disturbed by fall activity, and another month must pass before special excursion rates to the annual Exposition, State Fair and other attractions will bring the trade to the doors of our wholesale jewelers.

This quietness amongst the jewelers is still more observable as THE CIRCULAR's representative circulates about the retail stores. The heads of most of these have gone a-fishing or are otherwise getting ready for the fall and winter strength-wearing and nerve-taxing campaign.

The jobbers, of course, precede the retailers in getting back to work, and their purchases for fall are beginning to arrive. Mr. H. F. Hahn has returned after giving eastern manufacturers an insight into the increasing magnitude of his trade, by placing orders that would stagger a little fellow. Mr. Peter Lapp has been telling his down-east friends of the palatial premises now dignified by a "Lapp & Flershem" sign, and having come back to us is now doing time in them; his partner, "Happy Lem" Flershem, is himself again after a temporary illness.

C. H. Knights & Co. started out six travelers from their 40x100 warerooms at 125 State street on August 1, and every one of them has beaten his last year's sales record thus far, and report farmers and merchants alike encouraged over good crop prospects. These six representatives of this enterprising establishment cover a vast stretch of territory, reaching from Ohio to California, and as far south as the jumping-off place.

Last spring Mr. Barlow, representing C. H. Knights & Co., made a prospecting tour of the State of Texas with such encouraging results, that he is now engaged in a thorough canvass of the Lone Star State. He reports that there are two extremes in the Texan trade: first, the better class of Mexican inhabitants and wealthy Americans, who want the best money will buy, and second, the Spanish settler who, as a rule, want glitter and splurge for as near nothing as possible. The average purchase, however, equals in value that sold to buyers in Iowa or any other "banner State."

Mr. C. H. Knights, the senior member of this well-known house, is quite an expert in the way of crop statistics and forecasting business prospects. It is his experience that the jobber must sometimes call off his salesmen from territory where orders are plentiful, for oftentimes the country merchant is blind to coming calamities, and the drought or grasshopper visitation which the close observer sees in the near future does not enter into the calculations of the jeweler

until it finds him with more bills payable than customers, and more stock than peace of mind. The cautious jobber should, according to Mr. Knights, push harder or draw in as crop prospects and business conditions dictate. The credit man must do the thinking.

The watch material department added about a year ago by C. H. Knights & Co., is to-day the most comprehensive and complete in Chicago; not a bad record for an infant industry.

Mr. O. W. Wallis, of Cogswell & Wallis, is at his desk once more, and Jurgens & Andersen are still telling their trade of the largest importation of diamonds ever received in Chicago from Amsterdam. It amounted to something over \$50,000.

Mr. C. S. Raymond, of Omaha, stepped in to congratulate Mr. George Gorham the other day on the marriage which occurred at Galesburg last month, and left quite a tidy order for the Gorham sterling novelties, which have come to be indispensable if a jeweler would be up with the times.

Mr. E. W. Prentiss, the popular manager of this branch of the Gorham Manufacturing Co., is selecting and suggesting new ideas in their eastern factory.

Mr. Marsh, of the Western Silver Plate Co., makes his specialty the production of novelties in silver plate; he claims that the only reason silver hollow ware and silver combinations with glass and china find a slower sale with jewelers than was the case ten years ago, is the department store rivalry and dry goods store competition. "Silver plated ware," says this authority, "is no less popular now than then; it has not and cannot go out of style, but the whole thing simply resolves itself into a question of who's going to sell it."

There's a big department store on State street in this city of Chicago which retails more silverware than all the jewelers in town. Of course, this statement does not include the wonderfully attractive show rooms of the Meriden Britannia Co., devoted as it is exclusively to silver plate, but all the general jewelers are included, and the effect of this competition is felt more or less by all the jewelers in the country.

The more exclusive and dignified retailers have practically given up the silver plated ware business, while the smaller houses give insufficient attention to keeping up the variety and ask war time prices. The jeweler gives as an excuse for this that there's not so much call now-a-days for silverware, or that the general dealer or dry goods store has taken away his trade.

Where these stores get ahead of some jewelers is by careful attention to the keeping of their stock new and fresh in appearance, and by adding the novelties as fast as they are made. This does not need much of the jeweler's time or capital, and unless it adds materially to the year's profits of both manufacturer, jobber and retailer, the unanimous verdict of silverware experts in Chicago must be erroneous. Some of these last, however, advise the jeweler to use caution in selling unreliable makes.

An agent of Sonneborn, Loew & Co., a New York fancy goods house, is just now showing the retail jewelers in Chicago quite an elaborate sample line of silvered toilet case fittings and fancy articles which have every appearance of solid silver, and cost but a fraction of "coin" or "sterling." Glass bottles plated with silver are among the collection and are sold as quadruple plate. It is claimed that by this new process anything and everything, no matter how perishable or delicate, can be so coated with silver as to last forever. Straw hats, for example, or a rose, a thin glass vase or what you please.

Some of the friends of Manager Harmount, of the Middletown Plate Company, feared they were making a miss of it by taking an advanced position on the corner of Wabash avenue and Congress street. The wise men were wrong, for none of the silverware houses present a busier record than the handsome establishment fronting the new Auditorium.

That old and honored landmark, the Matson jewelry store, seem

to have recovered from the shock occasioned by the death of Mr. N. Matson, and presents as businesslike and attractive an appearance as in the days of its greatest prosperity. Mr. Edward Forman, always prominently identified with the business, is in charge as the representative of the committee of creditors who purchased the stock, and the record made by Mr. Forman has won for him the praise and confidence of those most interested, and a standing among financiers not easily attained.

Among the first to feel an active and invigorating fall breeze are those identified with the watch and clock industries. All of these, without exception, report brisk business. The agents of the American Waltham Watch Co. say they are away ahead of last year. The Elgin National are sending out their movements as fast as made, and the Chicago representatives of other watch and watch case factories seem correspondingly happy.

The clock companies say their pendulums are going more rapidly than a year ago now, and, all in all, Chicago and the West look for a money making record when Father Time is frozen out of 1888.

Among the prominent jewelers who have visited this market recently are McLachlan and Lowell, of Elkhart, Indiana; Myers, of St. Paul, Minn.; John W. Kurtz, of Princeton, Indiana; C. S. Raymond, of Omaha, and D. G. Galett, of Aberdeen, Dakota. But, as remarked above, buyers have not commenced to come in yet. They're waiting for the excursion rates and city attractions, which we will give them in plenty next month.

THE CIRCULAR'S OBSERVER.

"Rock Crystal Watches."

A NEW and peculiar class of timepieces has lately been brought out by the Waltham Watch Company which illustrates the steady progress that is being made in the arts of skill and precision. This is a watch of ordinary size, of which the case and plates are made of Brazilian pebble or rock crystal, thus rendering the watch transparent, and exposing to plain view the wheels and all other parts of the interior mechanism. Watches of this kind are now kept in regular stock by the Waltham company, and as timekeepers they possess the usual superior excellence for which all Waltham watches are now celebrated. The rock crystal watch is, we understand, the result of the especial skill and genius of Mr. Wm. R. Wills, who for the past thirty-one years has had charge of the jewelry department of the Waltham Watch company. He has discovered a new and rapid mode of cutting crystals and gems of all kinds, by which the lapidary's art is greatly facilitated. Operations heretofore requiring two months' time are now reduced to two hours. Mr. Wills seems to have learned how to carve, cut, and bore the hardest stones with as much facility certainly, and precision as if the materials were so much brass. He will, for example, take a six inch block of pebble, and in a couple of hours cut it into sheets of any desired thickness; or from the same block cut out the center of the casing or solid ring for a watch case. We lately examined one of these new rock crystal watches. The center of the case is of rock crystal, in one piece. It is bored for the stem and stem winder, which is secured therein by clamping screws. It is also bored for the push pin by which the winding and setting mechanism is operated. The two plates of the watch, between which the wheels rotate, are made of rock crystal. The pivots of the balance bridge, pallet bridge, the center wheel, and the escape wheel are set in rubies, and these rubies are set in sapphires, which latter are set in the crystal plates, these settings being secured to the plates by friction. There are in all twelve sapphire settings, each carrying a ruby setting. The pivots of the barrel and crown wheel run in the crystal plates. The plates are held apart by sapphire pillars, through which screws pass. The balance cock and pallet bridge are of rock crystal, the push pin is of chrysolite. For

the various screws and settings there are thirty-eight holes drilled in the crystal plates. The dial is made in the form of a skeleton of gold. Above each hour mark is a diamond, and between the diamonds there is a ruby for each minute. The diameter of the rock crystal plates is $1\frac{7}{8}$ inches. The front and back of the case is composed of a crystal plate, thus constructed the watch is transparent, and may be used as a slide for a magic lantern. Altogether, it is a unique and attractive article. Another of the Watches which we examined had its front plate made of red agate, and presented a very beautiful appearance.—*Scientific American*.



[FROM OUR SPECIAL CORRESPONDENT.]

BOSTON, August 17, 1888.

The New England jewelry trade has been unusually dull during the last six months. True, there have been occasional spurts, but these fell a long ways short of keeping their promise to the hopes of the dealers, both here in Boston and in the outlying towns, whose business prosperity is largely dependent upon that of the metropolis. It's the general average that counts when the books are balanced, and both wholesalers and retailers are kicking with a mild modesty which is none the less heartfelt. The leading firms complain that they haven't began to do the business they did a year ago this time, and give as a principal reason the general dullness in all lines of commercial activity.

It is for the highest priced goods, strangely enough, that the demand is greatest. These have been called for with a steadiness unknown in the lines of plated ware, for the customers who can afford to buy the most expensive jewelry are the last to be affected by the hard times. Shreve, Crump & Low, for instance, who have as large and as fine a retail stock as any house outside of New York, report a fair demand for diamonds and the higher grades of watches. They carry no plated ware at all.

Enameled goods are much in vogue this summer among the *elite* of Back Bay and Beacon street. Blue and black are the favorite colors. Those who ought to know tell me that the fashion is likely to run for at least a year longer. Enameled brooches, pins, ear rings, charms, etc., in endless varieties of style, are shown in the windows and counter cases, so that one's taste is at liberty to roam through the whole range of art. The combinations are, for the most part, quiet and neat, few being at all gaudy. Most of them are manufactured in Newark, N. J., and come directly to the local dealers.

D. C. Percival & Co., one of the largest jobbing firms in Boston, say that trade in plated ware has fallen off heavily. They don't find any great fault with this, however, as profits are larger in proportion on the more expensive grades. People of moderate means are the first to feel a financial stringency, and about the first luxury cut from their list is jewelry. Report has it that the present slackness is seriously affecting the Attleboro and Providence manufacturers of plated goods, and many of them are carrying large stocks upon which it is exceedingly difficult to realize. They are keeping only about two-thirds of the number of men busy who drove their works a year ago, and they don't look forward with any great degree of satisfaction to the holiday and Christmas outlook. There are others, on the other hand, who are less pessimistic, and, basing their hopes on the memory of past prosperity, predict the usual fall and winter revival.

I have taken occasion to talk with leading men in the trade as to the probable effect of the Mills bill, if enacted. Most of them agree that the New England jewelry market will not be materially

influenced by its passage, as opera glasses are the only articles in the list upon which a reduction of existing duty is contemplated. The fact is, Boston jewelers don't manifest any intense interest in the tariff issue. Most of the articles they carry are of home manufacture and the raw materials are practically at their doors.

The Boston Jewelers' Club, organized a few months ago out of the old jobbers' association, serves to unite the wholesalers more closely. The objects of the club are social intercourse, mutual enjoyment and friendly interchange of views on trade matters and topics of general interest. Mr. Charles Harwood is President, and Mr. Irving Smith, Secretary. Dinners are held monthly and papers read. An executive committee looks up the standing of unknown or doubtful firms, and keeps the members of the club posted. In this way the club has already accomplished much. Whether out of this nucleus a jewelers' syndicate will be evolved is one of the matters which are not yet disclosed.

LEON.



[THE CIRCULAR is not responsible for the opinions or statements of contributors, but is willing to accord space to all who desire to write on subjects of interest to the jewelry trade. All communications must be accompanied by a responsible name as a guarantee of good faith. No attention will be paid to anonymous letters. Correspondence solicited.]

DEMAGNETIZING PROCESSES.

To the Editor of the Jewelers' Circular:

The extensive use of electricity throughout the country is bringing magnetized watches into the hands of almost every watchmaker. If there is any thorough and reliable way of demagnetizing them that is within the reach of the average watchmaker, without sending them to our large cities, thus entailing an expense and loss of time, the information would be greatly appreciated by a large number of the craft.

A SUBSCRIBER.

San Jose, Cal., August 11, 1888.

ENGLISH AS SHE IS SPOKE.

The following communication received by us is a good specimen of elegant English!

"I have started a wholesale subscription agency but have not got your paper in it. But I will publish a new book soon, and I will place your paper in the next number of my newspaper price list. Please send me your cash commission on your paper and I think I can send you a good many subscribers because there is no subscription agency in none of the neighboring towns. So please send me your commission soon."

BOUND VOLUMES FOR SALE.

To the Editor of the Jewelers' Circular:

In view of changing my business and residence, I am induced to offer my twelve volumes of THE JEWELERS' CIRCULAR to the party who offers most for them. They are Vols. VII. to XVIII. inclusive. I regret to say No. 6, of Vol. X., and No. 2 and No. 10, of Vol. XVI., are missing. (There are two No. 8's of Vol. XVI.) They are, with these exceptions, all perfect.

I am, yours truly,

P. M. WHITMAN.

Beaufort, S. C., August 16, 1888.

To the Editor of The Jewelers' Circular:

In 1872 or '73, when the small paper called *The Horological Review* was published, there appeared in one issue a full descriptive rule to

find the length of a pendulum to a clock. I lost the copy that contained the rule when my store was burned on the night of December 27, 1884. Can you furnish me with an old copy that contains the rule, or can you publish it in full in THE CIRCULAR as it was in the *Review*. If you can, send me an original copy of the *Review*, also the price, and I will remit the amount.

WALTER VAIL.

Deposit, N. Y., August 20.

[We copy the following out of *The American Horological Journal*, Vol. II., page 48: "The method of measuring clock pendulums, so as to get the right length when they are lost or broken, is: First find the number of revolutions or parts of a revolution the scape wheel makes in a minute; multiply the number of revolutions or parts of a revolution by twice the number of teeth that there are in the scape wheel, which will give the number of vibrations the desired pendulum will have to make in a minute; then divide the number, 141,120.0, by the square of the number of vibrations, and the product will be the length of the pendulum in inches."—ED.]

To the Editor of the Jewelers' Circular:

Will you kindly furnish me with information where I can get practical instructions on the construction of a time system by which I can have one primary clock of unquestioned accuracy, and by electric connections and such necessary apparatus attached to any ordinary clock, correct time of the same by means of contact at such periods as required; the corrections to be made automatically. I have been working on the above for a short time, and thought if there was such a thing in the market I would secure it, as life is too short to puzzle away time upon it when another man has already done so, and the information can be thus obtained.

Very respectfully,

WM. BURNS, JR.

Coshocton, O., Aug. 11, 1888.

[The above communication has been referred to Mr. James Hamblet, Room 48, Western Union Building, N. Y. City, who is a proper authority on the subject of electric time systems.—ED.]

ANSWERS TO CORRESPONDENTS.

"40." We do not answer anonymous communications.

KIND WORDS.

Mr. E. D. Root, Chatham, N. Y., writes: "Enclosed find one year's subscription for THE CIRCULAR, which I highly prize."

The Jewelers' Security Alliance.

President, DAVID C. DODD, JR.

First Vice-President, AUGUSTUS K. SLOAN.....Of Carter, Sloan & Co.

Second Vice-President, HENRY HAYES... ..Of Wheeler, Parsons & Hayes.

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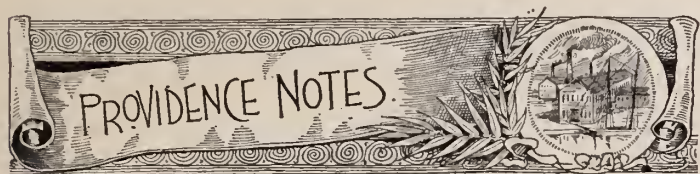
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*For further information, Application Blanks for Membership, By-Laws, etc., Address P. O. Box 3277. 170 Broadway, New York.

The regular monthly meeting of the Executive Committee was held at the Alliance office on Friday, the 10th inst. There were

present A. K. Sloan, Vice-President, J. B. Bowden, Chairman, Messrs. Alford, Lewis, and Geo. H. Hodenpyl, Secretary.

The following were admitted to membership: Henry C. Bisbee, Ludington ave., Ludington, Mich.; Isaac Brush, 97 State st., Bridgeport, Conn.; Harry A. Clark, Central Square, Bridgewater, Mass.; Henry Kohn, 15 Asylum st., Hartford, Conn.; Doering & Robinson, 925 Noble st., Anniston, Ala.; Chas. F. Gordon, 220 Texas st., Shreveport, La. On July 27th: J. S. Edwards, 213 Main st., Buffalo, N. Y.



[FROM OUR SPECIAL CORRESPONDENT.]

PROVIDENCE, August 15, 1888.

There has been little or no improvement in business with the manufacturing jewelers during the past month, and the auspicious opening of trade at the commencement of the season has taken on a change and received quite a set-back, so to speak, as already one can hear the remark and passed along that business is quiet, and unless times change materially very soon with them it will be extremely dull. One does not like to be considered a pessimist, but facts are facts, and are stubborn things to fight against even in business. Some talk about a boom being on, but the majority in the jewelry business, should they give the figures as they appear upon their ledgers, would fail to find it. Sales to date on the average of the amount of business transacted in this city, it is safe to say, fall anywhere from twenty to thirty per cent. short of the amount of same during the corresponding period in the year of 1887. A "pointer" of the quiet times of the trade is the great number of manufacturers who (for the first time) have gotten up something in the campaign badge line to help them out on their regular lines of goods, which they had found to be selling so slowly of late that they were compelled to do something in order to keep employees running on orders that would show some profit at the end of the season, but so many different badges are on the market that the business is completely over-done, and some of the jobbers have already declined to have anything to do with them, as they feel that there is no bottom to the prices. Collections are stagnant and little money changing hands at present.

The Gorham Manufacturing Co., under the efficient management of Secretary Lawton, is about issuing its new catalogue.

Mr. Charles Downs has gone to Madrid to pay his brother a visit of about three months.

Mr. C. Anthony Fowler and family, of New York, will return from the "Hotel Wentworth" at Portsmouth, N. H., (where they are spending the summer) about the 10th of September.

Mr. C. Edward Paine and family arrived at New York per the North German Lloyd steamer *Trave* on July 28, from his recent trip abroad.

O. C. Devereux & Co. have removed their office from No. 220 to No. 224 Eddy street, formerly occupied by the Heaton Button Fastener Co., where he has more extended quarters for the prosecution of his business.

The finest line of plated charms and emblems shown to the trade this fall, it is safe to say, is that of C. A. Russell & Co., of No. 102 Friendship street.

"On Dit" that Howard & Co. have just finished for Mr. Louis L. Lorillard, of Newport, R. I., fifty solid gold Harrison and Morton

campaign buttons, which he will present to his intimate friends as souvenirs of the campaign.

Mr. George Pitts is meeting with great success on his sales of campaign goods.

The Goelet prize cup for the season's race off Newport was manufactured by the Whiting Manufacturing Co., and cost about \$1,000.

The Heaton Button Fastener Co. have removed their works from Eddy street, corner of Clifford, to No. 113 South Water street.

Mr. J. F. Sprague has removed from No. 40 Potter street to No. 178 Eddy street, corner of Friendship street.

Mr. B. C. Samuels, of the Pacific Jewelry Co., of San Francisco, was in the city the past week, and was registered at the Narragansett Hotel. Mr. Samuels placed heavy orders with some of the leading manufacturers.

Mr. Frank T. Pearce and family are at Buttonwoods for the summer, where they are taking solid comfort.

Howard & Son are now driving their works to their fullest capacity of about one hundred and sixty hands, and are hardly able to keep abreast with the great number of orders they are receiving daily.

Ostby & Barton, of No. 83 Clifford street, report business in the ring line to be decidedly good, and are employing more hands than ever before.

Flint, Blood & Young's headquarters are now located here, from which point all business will be transacted, and not from New York as formerly.

W. H. Luther & Son, of No. 140 Oxford street, this city, are still shipping badges by the thousands of gross, and, being of the cheaper grade, they find a ready sale throughout the South and West.

Mr. Jerome Fitzgerald was at "Camp Taft" with his company from Tuesday until Saturday of the past week, and returned much bronzed and in the best of health.

Mr. Charles G. Bloomer, of Pawtuxet, has retired from the firm of C. G. Bloomer & Sons, which is succeeded by his sons, Messrs. W., Chas. G., Jr., and Frank W., and under the firm name of C. G. Bloomer's Sons, who will continue the business as formerly at the new factory and the old stand at Pawtuxet.

The many friends of the late Walter B. Randall will be shocked to hear of his death, which occurred at his home at No. 101 Smith street on Wednesday last, after an illness of only a few hours, from the effects of inhaling the fumes from a carboy of nitric acid which had exploded in the factory of Schultz & Co., of No. 38 Friendship street, of which he was at the time of the accident junior partner. He was a jovial and genial companion, and sergeant of Company B, 1st Light Infantry, and well liked and popular with all whom he came in contact.

The Gorham Manufacturing Co., whose works are now located on North Main street, commenced to build their new works at Elmwood on July 25, by breaking ground for their new factory, the main building of which will be about 450 feet in length, three stories high, with wings and extensions. The building will be constructed of brick, with granite facings on corners and trimmings of same. The foundations will be rushed along as fast as convenient to make them entirely first-class, as no pains will be spared in the construction of any part of this immense structure, and when finished during the coming spring or summer will present a very solid and substantial appearance and an ornament to the city.

F. T. Pearce & Co., of No. 29 Point street, are rushed with orders for their celebrated lines of pens, pencils, etc., which speaks well for the goods manufactured by this house. Their trade for the fall season has been very satisfactory.

The Remington-Carpenter case, which came off in the Court of

Common Pleas, resulted in a verdict of \$98 for Mr. Remington, the plaintiff.

In the Court of Common Pleas, on Saturday, the 14th inst., the case of Eliza S. Chapman against Walter C. Smith, Sheriff, was heard. This is an appeal from the lower courts and is an action for trover and conversion of \$100 worth of precious stones, brought by the foreclosing mortgagee of Chapman & Meister, who succeeded Arendt, Meister & Co., against an officer attaching for Lorsch, Dreyfus & Co., creditors of the firm of Arendt, Meister & Co. A jury trial waived and the case was heard and held for advisement.

The business of Potter, Read & Co., of No. 407 Pine street, has been sold at auction to the mortgagee, Mr. Ezra P. Lyon, who will continue the business. Mr. Read has assumed charge.

B. L. Hall & Co. are continuing their business at the old stand as formerly.

R. L. Griffith & Son, of No. 129 Eddy street, are meeting with very pleasing success on their line of campaign goods, and are experiencing some trouble in not being able to fill orders as promptly as goods are required by their trade.

Tilden, Thurber & Co. close their store at 1 P. M. on Saturdays during the month of August, which gives their employees a half-holiday, which is much appreciated by them.

The will of the late Thos. H. Lowe has been proved, and Mr. Edwin Lowe, his son, accepted as executor, who will settle the estate, the inventory of which was filed on Tuesday, and amounted to \$44,742.90.

Mr. Wm. Pearson has severed his connection with the firm of B. L. Hall & Co., and has entered the employ of Godfrey & Adams.

Secretary Morton, of the Manufacturing Jewelers' Board of Trade, passed his vacation at Portsmouth, R. I.

In the action of trover of E. S. Chapman against Walter C. Smith, the plaintiff was awarded \$65 and costs.

Crowell & Worthington have succeeded the firm of Tiffany & Co., dealers in jewelers' supplies, at No. 72 Weybossett street.

Later—The firm of B. L. Hall & Co. have assigned to Mr. C. C. Gray.

John C. Harrington & Co., of No. 129 Eddy street, are showing a new line of plated chain to the trade this fall on which they are taking some flattering orders, and are forced to run their works day and night so far to be able to finish up orders on time for the jobber.

FAIRFAX.

Apparatus for Gilding Wire, Fabric, etc.

DR. ED. EBERMEYER says that the demands made of such an apparatus are a nice gilding, safety from breaking even the thinnest wire, and that it shall spool the wire after being gilt. The gilding is effected by conducting the silvered wire through a galvanic gold bath by aid of mechanical contrivance.

The gold bath is contained in a porcelain enameled iron vessel, into which the galvanic current is conducted. Platinum or gold plate is used as anode. The wire to be gilt runs over a metal roll standing in connection with the zinc pole of the battery, and is kept down in the gold bath by porcelain or vulcanized india rubber rolls. After the fabric or wire issues from the gold bath, it passes over glass rolls and enters a cyanide of potassium bath, in which it is also kept down by porcelain or vulcanized india rubber rolls. It next passes through clean water for washing, and is then dried between three or four rolls swathed with cotton cloth, and then spooled.

For the gold bath may be used 15 grams neutral chloride of gold, 100 grams French cyanide of potassium II., 75 per cent., and 1 liter distilled water.

I store the bath of this strength. When to be used, it is diluted

with from 1 to 1¼ liters water; it is necessary to use 75 per cent. cyanide, as the commercial French cyanide of potassium, III., contains only 55 to 60 per cent., which is too weak and too much mixed with other salts. That of I. is about 95 per cent. strong, which is too much, as by its uses the gold bath is apt to decompose; black specks are formed, as well as brown solutions of paracyan.

In the reeling arrangement the transmission of motion is only effected by tight cords, whereby all jerks and knocks are avoided. In order to avoid every friction, the wire to be gilt passes over easily-revolving rolls. The traction motion is effected by a crank, and the connection between crank and reel is established by tightened cords. A second run of cord from the crank axis produces the uniform spooling. A very slow motion is to be effected by the introduction of suitable arrangements, and different rates of speed may be had by cones upon the traction contrivance.



[FROM OUR SPECIAL CORRESPONDENT.]

ATTLEBORO, August 18, 1888.

I will defy any man, however well posted he may be or however long an experience he may have had, to keep the run of the ups and downs in the jewelry business. No sooner does everything begin to run smoothly and the manufacturers think they are going to have plenty of work, when suddenly there comes a lull and it is almost impossible to get orders except for some kinds of specialties. In my last letter I informed the readers of THE CIRCULAR that the jewelry business was in a highly prosperous condition. Well, such was the condition of the trade then, but a cloud has rolled up, and it would seem that some of those western jobbers had organized themselves into a society for the purpose of forgetting the existence of "The Attleboros." I don't mean to say that there is absolutely no business here. It's no such thing. It is probable that at the moment when I write these words every shop in town is running, but the trouble is that they are running on short time, and from the slowness in which orders are received the prospects ahead are not encouraging. There appears to be no particular reason for this except an overstocked market. I inquired of one of the largest manufacturers in regard to this the other day, and he said that, taking everything into consideration, nothing better could be expected. Every shop in the town could, if pushed, supply the entire demand in their line for three months, and it requires no great penetrating powers to see where the trouble is. The time was, and that not long ago, when most of the young men and boys in either of these towns wanted to learn the jewelry business, but this has all been changed. Now there are very few who are taking this up as a trade.

ATTLEBORO.

Blake & Claffin, who for a time were busy on campaign goods, do not find as large a sale on this line as was to be found a month ago, but are devoting their time more to their regular line.

Mr. Ripley, of Watson, Newell & Co., is on the road the greater part of the time. He is one of the best salesmen in town, and if there are any orders to be got they are pretty likely to be soon found on his order book.

The Bates Button Co., one of the new firms, is composed of two live young men, well known in town, and appears to be doing a large business.

Mr. Bullock, of the firm of W. H. Wilmarth & Co., thinks the market overdone, and the prospects are for only a light fall trade.

Mr. E. S. Horton, of the firm of Horton, Angell & Co., is looking

for political advancement, and would probably make a good man for the place which some of his friends desire to give him, but there are others in the field and he is not likely to have smooth sailing.

ATTLEBORO FALLS.

Mr. R. F. Simmons, of the firm of R. F. Simmons & Co., is busy just now in his capacity of President of the Attleboro Agricultural Association. He being a lover of horse flesh, will probably see that the trotting will be up to the standard. This firm are mixed up in a case in the courts which comes up next month.

NORTH ATTLEBORO.

The people of this community are talking railroad now during all their spare moments. This subject, strange to say, has in a large measure superseded that interesting one of politics. Well, it is to be hoped it will end in something more than talk. If the road which is hoped for becomes an accomplished fact, there is a grand future for North Attleboro. Mr. T. I. Smith, a leading jeweler, is at the head of the movement, and is putting some of his well known vitality to the scheme. A meeting has been held and a large amount of stock subscribed for, and without doubt another year will see the road completed. The different jewelry shops are mostly running full time, but the orders are not coming in very fast. The prospects for the future appear to be good, but how soon the trade will start up cannot be told.

MENDON.

How Thermometers are Made.



THE FIRST point in the construction of the mercurial thermometer is to see that the tube is of uniform caliber throughout its whole interior. To ascertain this, a short column of mercury is put into the tube and moved up and down, to see if its length remains the same through all parts of the tube. If a tube the caliber of which is not uniform is used, slight differences are made in its graduation to allow for this. A scale of equal parts is etched upon the tube, and from observations of the inequalities of the column of mercury moved in it, a table giving the temperature corresponding to these divisions is formed. A bulb is now blown on the tube, and while the open end of the latter is dipped into mercury, heat is applied to the bulb to expand the air in it. This heat is then withdrawn, and the air within contracting, a portion of the mercury rises in the tube and partly fills the bulb. To the open end of the tube a funnel containing mercury is fitted, and the bulb is placed over a flame until it boils, thus expending all air and moisture from the instrument. On cooling, the tube instantly fills with mercury. The bulb is now placed in some hot fluid, causing the mercury within it to expand and flow over the top of the tube, and when this overflow has ceased the open end of the tube is heated with a blow pipe flame. To graduate the instrument the bulb is placed in melting ice, and when the top of the mercury column has fallen as low as it will, note is taken of its position as compared with the scale on the tube. This is the freezing point; it is marked as zero on the thermometers of Celsius and Reaumur, and as 32° on the Fahrenheit scale.

To determine the boiling point, the instrument is placed in a metallic vessel with double walls, between which circulates the steam from boiling water. Between the freezing and boiling points of water 100 equal degrees are marked in the centigrade graduation of Celsius, 180 degrees on the Fahrenheit plan, and 80 degrees on the Reaumur. In many thermometers all three of these graduations are indicated on the frame to which the tube is attached. Some weeks after a thermometer has been made and regulated, it may be noticed that when the bulb has been immersed in pounded ice the mercury does not quite descend to the freezing point; this is owing to a gradual expansion of the mercury, which usually goes on for two

years, when it is found that the zero point has risen nearly a whole degree. It is then necessary to slide down the scale to which the tube is fastened, so that it will accurately read the movements of the mercury. After this change the accuracy of the thermometer is assured, as there is no further expansion of the mercury column.



[FROM OUR SPECIAL CORRESPONDENT.]

MINNEAPOLIS, Minn., August 14, 1888.

Mr. T. B. Myers, of Myers & Co., of St. Paul, is understood to be in New York for the purpose of effecting a settlement with his creditors. Mr. Myers recently fitted up the handsomest retail store in St. Paul, and about the same time the death of his partner, Mr. Carpenter, occurred. He has enjoyed one of the best trades in the city, but has never had a large amount of capital. Reports received here are to the effect that he has made a settlement on the basis of fifty cents on the dollar, payable in six months' notes satisfactorily indorsed. He got an extension in March last when the assets were shown to be \$61,000 and the liabilities \$30,000. At the time that settlement was made four, six, eight and ten months' notes were given and the present necessity for a new settlement was the inability to meet the first of this series of notes due at the end of four months. Mr. Myers is expected home from New York the last of next week. In common with all the dealers he has suffered from the dull trade, although Mr. Myers' financial difficulties may be traced chiefly to the death of his partner, Mr. Carpenter, which involved a settlement of his estate and the expenditure in fitting up a large and handsome store and stocking it heavily.

The Warner Jewelry Co. of this city, is suing Rosenblott & Ettinger to recover damages for injury said to have been done the company's business reputation. Complainant states that the jewelry company bought a lot of alleged silver bracelets from the defendant taking the word of the latter that the articles were coin silver, whereas, in fact, they were nothing but brass washed with silver. The plaintiff knew nothing of the fraud until the customers to whom they had sold the bracelets began to return them with complaints. The company claim that their reputation has been seriously injured by the spurious goods and sue to recover \$5,000 damages.

The Aurora Plate Manufacturing company and S. Swartchild & Co. a short time since made application for a receiver of the stock of Solomon Lows, a jeweler who has done business at No. 1417 Washington avenue, south. The goods were sold on August 2, under a mortgage foreclosure. Lows had been doing business in a small way and the failure is not particularly significant.

Benjamin Cardozo, a jobber and jeweler, caused the arrest the past week of Harry Rosenberg, who had been in his employ as a traveling man, on a charge of embezzling \$800 worth of goods. Rosenberg went out for Cardozo about two months ago taking about \$800 worth of goods and gave Cardozo drafts for \$400 which proved to be worthless; he then disappeared, but last week he was found at Dickinson, Montana, and brought to this city on Sunday last. The goods were disposed of to a firm in this city and a portion of them have been recovered. Rosenberg is said to have swindled Simon, the pawnbroker of St. Paul, in about the same way a short time since. He is now in jail here awaiting trial.

As a whole trade has been as lively with the jobbers as they could wish were the case. Mr. Warner, of the Warner Jewelry company, assures me that his trade was considerably better in July this year

than it was in July of last year, and that although he has more on his books than was the case a year ago, his collections amount from month to month to less. His experience is that of nearly all the other jobbers in this locality. There is no trouble to sell the goods if the jobber is willing to wait for his money. Collections have been very poor and what the fall trade will be depends entirely on the outcome of the crops, which at present promise good. There has been a great deal of rain during the past week or two which is likely to do more or less damage and this has given the dealers a conservative spirit. The usual exposition and holiday season is at hand, however, when a great many country merchants seek St. Paul and Minneapolis on both business and pleasure. The railroads make a low rate and a good many dealers postpone their purchases until they can personally inspect the larger stocks which the jobbers can show in their warerooms. In this city and St. Paul this period, therefore, is a one of lull before possibly greater activity. Should the next week or two develop the fact that the crop is a large one, the fall trade will be better than it has been in a good many years. The retailers all are complaining of the light trade. Real estate speculation has been carried on to a great extent in both these cities during the past three or four years and there is at present a lull. The failures have been of men who have more money invested in real estate than they can readily get out and this has affected the trade of the retailers to a considerable extent. The prospects are, however, that it will be better after harvest. The retailers, too, will profit more or less by the fall influx of visitors from the surrounding country.

NEMO.

Something About Pearls.



NO CITY in the world, we read, was ever richer in precious pearls than Rome in the time of the Cæsars. Special mention is made of Lollia Pollena, wife of Caius Caligula. "I have seen her," says Pliny, "so bedecked with emeralds and pearls disposed in rows, ranks, and courses, one by another, round about the attire of her head, her cowl, her peruke of hair, her band grace and chaplet, hanging at her ears, round her neck as an ornament in a carcanet, upon her wrists as bracelets, and on her fingers as rings, that she glittered and shone like the sun as she went." The habit was so common of using pearls as a base to throw up the brilliance of other gems that we may, perhaps, believe even in Caligula's slippers of pearls, with rubies and emeralds set upon them like flowers.

The Roman ladies had a special favor for pearls as earrings, and it was one of their consuming ambitions to possess exceptionally fine specimens for this purpose. They preferred the pear-shaped pearls, and often wore two or three of them strung together. They jingled gently as they moved about—fitting accompaniment, it may be said, to their graceful movements; and from this jingling they got their name, which was *crotalia*, or "rattles."

And the taste of the Roman ladies for pearls has perpetuated itself, though other of the ancient luxurious habits, which in their case accompanied it, have long died out. The women of Florence even now are not contented if they do not possess a necklet of pearls, and this generally forms the marriage portion of the middle-class women. It is thought, just as it was in ancient Rome, that this gives an air of respectability, and forms a sure protection from insult in the streets or elsewhere.

Pearls are only twice mentioned in the authorized version of the Old Testament, and both times it is used as a symbol of wisdom.

Some critics have held that the Hebrew word did not exactly mean pearl, but since there can be no doubt that our Saviour referred to the true pearl when he spoke of the "pearl of great price," we may the more implicitly accept it, and gather from the use of the pearl as

a figure by the Jewish writers that a perfect pearl has been rare in all ages, and considered of the greatest value.

As may be presumed, from what we have just said, the Romans classed first among pearls those which were pear-shaped, and gave to them the name of *unio*, or unique, a name now in our scientific terminology attached with fitness, as we have seen, to the species of mollusc from which some of the most perfect pearls are obtained.

"To be perfect," says Mr. Emmanuel in his valuable work on gems, "a pearl must be of perfectly pure white color; it must be perfectly round or drop-shaped; it must be slightly transparent, it must be free from spots or blemish; and it must possess the luster characteristic of the gem."

At the breaking up of the crown treasury of France in 1791, a magnificent large spherical pearl, unbored, was sold for £8,000; and two pear-shaped ones, which each weighed 214 grains, were valued at £12,000. Another famous pearl of history was that sold to Philip the Fourth of Spain in 1625. It is said that the Shah of Persia is the happy possessor of a pearl valued at £60,000—a goodly estate in small compass, light and portable—and the Imam of Muscat one for which he has been offered £30,000.

The second division in the Roman classification of pearls was "Margarites," which included pearls of any shape or color, large and misshapen often, but often, too, of exceptional purity and beauty. The jewelers of the Cinque-Cento period, with the fertile ingenuity that distinguished them, gave a new value to these eccentric specimens by mounting them in styles as eccentric. Mermaids and sea monsters were favorite designs; and some illustrations of this treatment are to be seen in collections in this country, notably in the Devonshire Cabinet.

Unlike most gems, the pearl comes to us fresh, pure, lustrous, direct from the hand of nature. Other precious stones undergo much careful labor at the hands of the lapidary, and sometimes owe much to his art. Diamond-cutting is, indeed, a branch of art, and cameo-carving is a yet higher one. But the pearl owes nothing to man.

¶ This perhaps has a good deal to do with the sentiments we cherish toward it. It touches us with the same sense of simplicity and truth as the mountain daisy or the wild rose. It is absolutely a gift of nature's own. When we turn from the brilliant, dazzling coronet of diamonds or emeralds to a necklace of pearls, there is a sense of relief, of soft refreshment. The eye rests on it with quiet, satisfied repose. It seems so truly to typify steady and abiding affection, which needs no accessory or adornment to make it more attractive.

—*The Argosy*



[FROM OUR SPECIAL CORRESPONDENT.]

CINCINNATI, August 19, 1888.

The interesting feature of the Cincinnati Centennial is the exhibit made there by the jewelers of this city, and of them all none are more interesting than that made by the wholesale and retail house of Duhme & Co. From it there is a conspicuous absence of the usual quantity of finger rings, ear drops and breast pins so common to jewelers' displays. There is no shining array of silver spoons and plated forks. Instead of this, the commonplace, there is arranged for the benefit of the eye of the artist and bric-à-brac admirer, one of the handsomest and most elaborate collections of curios ever gathered together in one cabinet. Decorated fire screens and small cabinets, gorgeous vases, bronze statuary, silver designs, both useful and ornamental, toilet cases, punch bowls, etc., are the features of

this display. The visitor, who sees much to admire in the illuminated cards and other advertising daubs common in all expositions, see nothing particular to admire in this Duhme collection. The connoisseur in fine art, the person who would prefer the work of Rosa Bonheur to that of the favorite in *Judge* or in *Puck*, gives the Duhme exhibit pause every time.

Had a talk with Mr. John Holland, the gold pen manufacturer, to-day. He says he is doing his usual August business, which is to wait for the September business to begin. He knows he is getting his share, and is, therefore, satisfied. He, too, has a unique exhibition at the Centennial. In a beautiful ebony case he has arranged every possible design in gold pens and holders, paper cutters and everything which pertains to a well-appointed writing desk. He has fashioned a large butterfly and decorated its wings with his gold pens. The attention of all observers, when before this case, is uniformly riveted to a bottle of iridium labeled "100 ounces, worth \$100 an ounce." The uninitiated are stunned at finding that there is anything but diamonds more precious than gold.

In the American Jewelry Company's display is exhibited a \$2,000 diamond necklace, made, it is announced, from some of the French crown jewels. In it there are thirty-nine stones, the aggregate weight of which is seventy-seven karats. Naturally the showy ornament attracts a good deal of attention.

In the last correspondence from this city, mention was made of the enterprise of Clemens Hellebush in establishing a factory for the manufacturing of fine clock cases in imitation of those made by the French from black marble. Mr. Hellebush exhibits a large number of these cases at the Centennial so closely resembling the black marble, that through the glass which encloses them they deceive the very elect. That they are not genuine is only apparent to the non-expert when he thumps his knuckles against them. By the way, Mr. Hellebush was recently made the victim of a clever confidence game played upon one of his employees. By that game one of Mr. Hellebush's most trusted clerks was induced to deliver to a thief four watches, the aggregate value of which was nearly seven hundred dollars. As is usual with the police department of nearly every large city, the efforts made to recover the property were but slight. The loser did not feel like increasing his losses by contributing heavy fees to the officers of the law as incentives for them to work. Being an extensive taxpayer, he thought himself entitled to police protection and police assistance without turning the keys to his safe and his bank book over to the department, and he is right. His lost goods are still unrecovered.

The wholesale jewelry business in Cincinnati has the usual August stagnation, but proprietors have faith enough in the fall prospects to put all their traveling men out, even though it is a presidential election year. The Fox Bros., dealers in diamonds, told me to-day that they indicated their faith sufficiently last week by taking out of bond from the Cincinnati Custom House diamonds and other precious stones to the value of \$276,800. Mr. Fox, the senior member of the firm, insists that the western demand for ornaments is now for diamonds set in pearls, and for the fancy stones, such as rubies, etc. The solitaire just now is out of favor.

A funny rivalry is in progress between three jewelry stores of this city, the American Jewelry Company, Clemens Oskamp and Frank Herschide. The three stores are located on Vine street, the American Jewelry Company's and Oskamp's joining, and the latter being separated from Herschide's only by a little fruit store. Oskamp's place is an old landmark, Herschide has been in his present quarters for four or five years, while the American Company moved in but a few months ago. Soon after the new arrivals were settled they erected a large clock on a post which was set in the curb, thus throwing the Oskamp establishment somewhat in the shade. Just now Oskamp is finishing off a curbstone clock that makes the American Jewelry affair look like a pigmy to a Goliath, and now it is said

Herschide is only waiting the finishing touches to be put on the Oskamp clock before putting up a clock that will answer for a time indicator, an awning, a row of shade trees or a supporter to an elevated railroad, if ever any is built on the Vine street thoroughfare.

The two big clocks are suggestive of a high board fence between quarreling neighbors. Herschide's clock will put the time-consulting town on a broad grin.

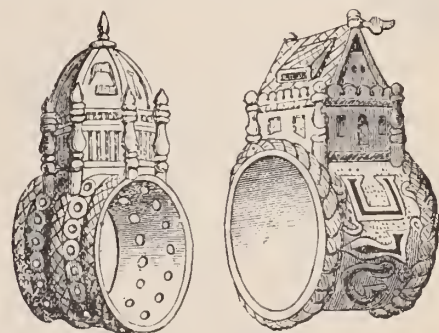
One of the most brilliant designers in pottery this country ever produced now lies dying at the Cincinnati Hospital. His name is Auckland. In artistic decorations he was a genius, and until a few days ago he was regarded as the most harmless of men. Something went wrong with his gray matter and he was transformed into a tiger. He shot and killed the engineer at the famous Rookwood Pottery, mortally wounded the superintendent and then inflicted wounds on himself that must prove fatal. As a clay modeler he had no equal. It will be hard to fill the place he has thus vacated.

Betrothal and Wedding Rings.



IN THE CIRCULAR of last month, in reply to a correspondent who desired to know upon which finger betrothal and wedding rings should be worn, we gave some information upon that very important subject, closing with the statement that fashion at present decrees that the engagement ring shall be worn on the fourth finger of the left hand, and that, subsequently, when the engagement shall have materialized into a wedding, the wedding ring shall be worn on the same finger, and in connection with the engagement ring. Twelve or fifteen years ago Mr. William Jones, F. S. A., wrote an extended volume entitled "Finger-ring Lore," wherein he gathered the ancient traditions regarding finger rings and much other interesting matter on the same subject. We make the following extracts in continuation of the subject brought forward by our correspondent. The illustrations herewith given are copies from the same work.

Regarding betrothal and wedding rings, the author says ;
"It would be difficult to find a subject more interesting in all its



HEBREW MARRIAGE RINGS.

associations than a wedding ring. From the most remote times it has had a mystical signification, appealing to our most cherished feelings, hopes and wishes. The circular form of the ring was accepted in days by-gone as a symbol of eternity, thus indicative of the stability of affection. We find some of our noted divines echoing the sentiments of old enthusiasts on the figurative virtues of a ring. Thus Dean Comber and Wheatley express themselves : "The matter of which this ring is made is gold, signifying how noble and durable our affection is ; the form is round, to imply that our respect (or regards) shall never have an end ; the place of it is on the fourth finger of the left hand, where the ancients thought there was a vein that came directly from the heart, and where it may be always

in view ; and, being a finger least used, where it may be least subject to be worn out ; but the main end is to be a visible and lasting token of the covenant which must never be forgotten.'

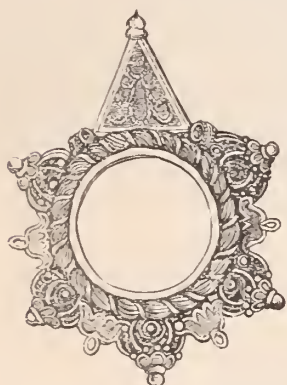
In an old Latin work, ascribing the invention of the ring to Tubal Cain, we find : 'The form of the ring being circular, that is, round, and without end, importeth thus much, that mutual love and hearty affection should roundly flow from one to the other, as in a circle, and that continually and forever.'

Herrick has versified this conceit :—

Julia, I bring	But it must play
To thee this ring,	Still either way,
Made for thy finger fit ;	And be, too, such a yoke
To show by this	As not, too wide,
That our love is	To overside,
Or should be, like to it,	Or be so straight to choke.
Close though it be,	So we who bear
The joint is free ;	This beam, must rear
So, when love's yoke is on,	Ourselves to such a height
It must not gall,	As that the stay
Nor fret at all	Of either may
With hard oppression,	Create the burthen light.

*And as this round
Is nowhere found
To flaw, or else to sever,
So let our love
As endless prove,
And pure as gold forever.*

The veneration for a wedding-ring is shown in the instance of the great lexicographer, Dr. Samuel Johnson. He writes under date March 28, 1753 : 'I kept this day as the anniversary of my Letty's death, with prayers and tears in the morning. In the evening I prayed for her conditionally, if it was lawful.' Her wedding-ring was



HEBREW BETROTHAL RING.

preserved by him, as long as he lived, with an affectionate care, in a little round wooden box, and in the inside of which was a slip of paper inscribed : 'Eheu ! Eliz. Johnson, nupta Jul. 9 1736 ; mortua, eheu ! Mart. 17. 1752.'

According to the 'London Press,' Mr John Lomax, bookseller, of Lichfield who died lately at the age of eighty-nine, possessed among many other Johnsonian relics, this wedding-ring of Mrs. Johnson.

The poet Moore, in his 'Diary,' mentions the gift of his mother, of her wedding-ring. He writes : 'Have been preparing my dear mother for my leaving her, now that I see her so much better. She is quite reconciled to my going, and said this morning : "Now, my dear Tom, don't let yourself be again alarmed about me in this manner, nor hurried away from your house and business." She then said she must, before I left her this morning, give me her wedding-ring as her last gift ; and accordingly, sending for the little trinket-box in which she kept it, she herself put the ring on my finger.'

The value, even to death, attached to wedding-rings has been frequently shown. In a testamentary document made at Edinburgh Castle by Mary, Queen of Scots, before the birth of her son James, and when under the impression that she would die in childbed, among numerous bequests, she enumerates her rings, of which she had a large number. Among them was a diamond ring, enameled red, recorded by the Queen herself as that with which 'she was espoused.' On the other side is written 'For the King gave it me.' This is presumed to be the ring with which Darnley wedded Mary in the privacy of Rizzio's chamber at Stirling, for at the public solemnity of their nuptials in the Chapel Royal of Holyrood three rings of surpassing richness were used.

A ring sent as a love-pledge, or token, was in frequent use in former times. Philip de Comines relates in his 'Memoirs' that, a

marriage between the Princess of Burgundy and the Duke of Austria (1477) being determined upon, a letter was written by the young lady at her father's command signifying her consent to the alliance, and a diamond ring of considerable value was sent as a pledge or token of it. At the time arranged for the ceremony the Princess was at Ghent, and, in the presence of ambassadors sent on that occasion, she was asked whether she designed to make good her promise. The Princess at once replied 'that she had written the letter and sent the ring in obedience to her father's command, and freely owned the contents of it.'

The engagement by a ring is also historically exemplified in late times by the notorious intimacy of George IV., when Prince Regent, with Mrs. Fitzherbert. In order to overcome her scruples to a private marriage (the Royal Marriage act having been a bar), the Prince caused himself one day to be bled, and put on an appearance of having attempted his own life, and sent some friends to bring her to him. She was then induced to allow him to engage her with a ring in the presence of witnesses, but she afterwards broke the engagement, went abroad, and for a long time resisted all the efforts made to induce her to return. It is singular that one of the chief instruments in bringing about the union of this ill-assorted pair was the notorious Philippe Egalité, Duke of Orleans.



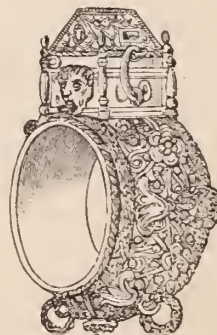
JEWISH.

The materials of which wedding-rings have been made are numerous ; besides the various metals, we have an instance of a leather ring made on the spur of the moment out of a piece of kid cut from the bride's glove. As a substitute for the usual ring, the church key has been put into requisition. Horace Walpole, in a letter to Mr. (afterwards Sir Robert) Mann, dated July 27, 1752, alludes to the use of a curtain-ring for this purpose : 'The event which has made most noise since my last is the extensive wedding of the youngest of the two Gunnings,' and he then describes an assembly at Lord Chesterfield's, when the Duke of Hamilton made love to Miss Gunning, and two nights after sent for a parson to perform the marriage ceremony. The Doctor refused to act without a license and a ring. 'The Duke swore he would send for the Archbishop ; at last they were married with a ring of the bed-curtain, at half-an-hour past twelve at night, at May Fair Chapel.'

In 'Notes and Queries' (2nd series, vol. x.) we find an editorial note on this subject. A parish clerk recollected an instance of a party that came to the church, and requested to be married with the



JEWISH.



JEWISH WEDDING RINGS.
(FROM THE FOULD COLLECTION).

church key. It was what is called a 'parish wedding,' and the parochial authorities, though willing to pay the church fees, because 'they were glad to get rid of the girl,' had not felt disposed to furnish the wedding-ring. The clerk stated, however, that, feeling some hesitation as to the substitution of the church key in his *own* church, he stepped into the great house hard by, and there borrowed an old *curtain-ring*, with which the marriage was solemnised.

The blessing of the wedding-ring is of ancient origin. The form

prescribed for the 'halowing' is given in 'The Doctrine of the Masse Booke from Wottonberge, by Nicholas Dorcaster,' 1554: 'Thou Maker and Conserver of mankinde, Geve of Spiritual Grace, and grauntor of Eternal Salvation, Lord, send thy blessing upon this ring, that she which shall weare it maye be armed wyth the virtue of heavenly defence, and that it may profit her to eternal salvation, thorowe Christ,' etc. A prayer followed this: '+halow Thou, Lord, this ring which we blesse in Thy holye Name, that what woman soever shall weare it, may stand fast in Thy peace, and continue in Thy wyll, and live, and grow, and wax old in Thy love, and be multiplied into the length of daies, thorow our Lord,' etc.

In the ancient ritual of marriage the ring was placed by the husband on the top of the thumb of the left hand, with the words, 'In the name of the Father;' he then removed it to the forefinger, saying, 'and of the Son,' then to the middle finger, adding, 'and of the Holy Ghost;' finally he left on the fourth finger, with the closing word 'Amen.'

The English 'Book of Common Prayer' orders that the ring should be placed on the fourth finger of the woman's left hand. The spousal manuals of York and Salisbury assign this practical reason for the selection of this finger: 'quia in illo digito est quædam vena procedens usque ad cor.' Other reasons than its connection with



BYZANTINE.

the heart are assigned by Macrobius. The author of the 'Vulgar Errors' had entirely overthrown the anatomical fiction.

Amongst the Hebrews, the finger of God denoted his power, and it was the forefingers of the gods of Greece and Italy which wore the ring, the emblem of divine supremacy.

Why the ring is worn on the left hand is said to signify the subjection of the wife to the husband; the right hand signifies power, independence, authority, the left dependence or subjection. Columbiere remarks: 'Some of the ancients made the ring to denote servitude, alleging that the bridegroom was to give it to his bride, to denote to her that she is to be subject to him, which Pythagoras seemed to confirm when he suggested wearing a straight ring, that is, not to submit to over-rigid servitude.'

In the 'British Apollo' (vol. i. page 127, edit. MDCCXXVI.) a question is asked: 'Why is it that the person to be married is enjoined to put a ring upon the fourth finger of his spouse's left hand?' The answer is: 'There is nothing more in this than that the custom was handed down to the present age, from the practice of our ancestors, who found the left hand more convenient for such ornaments than

the right, in that 'tis ever less employed; for the same reason they chose the fourth finger, which is not only less used than either of the rest, but is more capable of preserving a ring from bruises, having this one quality peculiar to itself, that it cannot be extended but in company with some other finger, whereas the rest may be singly stretched to their full length and straightened.

Some of the ancients' opinions in the matter, viz., that the ring was so worn because to that finger, and to that only, comes an artery from the heart; but, the politer knowledge of our modern anatomists having clearly demonstrated the

absurdity of that notion, we are rather inclined to the continuance of the custom owing to the reason above mentioned.'

The Greek Church directs that the ring be put on the right hand, and such may have been the practice in England, since Rastell, in his counter-challenge to Bishop Jewell, notes it as a novelty of the Reformation 'that the man should put the wedding ring on the fourth finger in the left hand of the woman, and not in the right hand as had been many hundreds of years continued.'

With the bridal ring, formerly, were delivered the keys of the house. This is of ancient origin, as I have noticed in mentioning the rings of the Romans. We read in Photius that Theosebius says to his wife: 'I formerly gave to thee the ring of union; now of temperance to aid thee in the seemly custody of my house.'

As pledges of betrothal, or wedding gifts, rings are of very ancient origin. They were worn by the Jews prior to Christian times, and constitute, even at present, an important feature in their marriage ceremonies. Wheatly says: 'The reason why a ring was pitched upon for the pledge, rather than anything else, was because anciently the ring was a seal, by which all orders were signed, and things of value secured, and therefore the delivery of it was a sign that the person to whom it was given was admitted into the highest friendship and trust. For which reason it was adopted as a ceremony in marriage to denote that the wife, in consideration of being espoused to the man, was admitted as a sharer in her husband's counsels, and a joint partner in his honour and estate, and therefore we find that not only the ring, but the keys, were, in former times, delivered to her at the marriage.'

Selden says that rings were first given in lieu of dowry-money, and that the wedding-ring came in to general use by the Jews after they saw it was everywhere prevalent. These Jewish rings were, in past ages, generally of large size and elaborate workmanship. Some curious examples are mentioned in the Londesborough Collection Catalogue. One ring, formerly belonging to the late Crofton Croker, is of German or Flemish work of the seventeenth century. It is of brass, with three points, or bosses, and belongs to a class of ring called Mazul-touv (pronounced *Mussul-taub*), or, freely translated, 'Joy be with you,' or 'Good luck to you.' In the same collection is a Jewish 'tower' betrothal ring, enamelled blue, of

the sixteenth century. Another betrothal ring belongs to the same class and date, called 'temple,' or 'tower,' from the figure of the sacred temple placed on their summit. In one of the Londesborough specimens it takes the form of a sexagonal building with a domed roof of an Eastern character; in another it is square, with a deeply-pitched roof, having movable vanes at the angles, and is probably the work of some German goldsmith. On the former of these rings the inscription is in enamelled letters, 'Joy be with you:' and the same words are in more richly-designed letters on the curve of the latter ring."

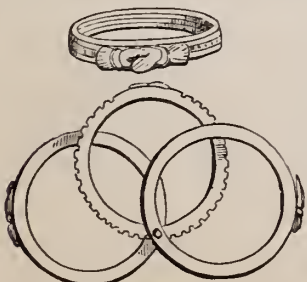
BROWN TINT TO STEEL.—Dissolve in four parts of water, two parts of crystallized chloride of iron, two parts of antimony, one part gallic acid, and apply with a sponge or cloth, and dry in the air; repeat until the color is of the tint desired, then rub well with oil. This is said to resist atmospheric moisture.



GEMMEL-RING, FOUND AT HORSELYDOWN.



GEMMEL-RING.



JOINTED BETROTHAL RING.

What the Optician Should Know About Optics.

By C. A. BUCKLIN, A. M. M. D., NEW YORK.



DURING the last three months we have considered somewhat extensively the subject of muscular asthenopia. For several years this journal has printed only the particular ideas of the editor on such optical questions as have been considered. We will commence a system of publishing articles by other authors on the various subjects in optics, only calling the attention of the reader to such matter as the editor of this special department thinks deserving of criticism. As we have recently considered the subject of asthenopia so fully we will commence our new system of work by considering an article on Asthenopia by Robert B. Carter, F. R. C. S. of London.

ASTHENOPIA.

In a large portion of cases of asthenopia, and in some in which no anatrophia* is discoverable, we find that the employment of the eyes is limited by conditions of time. After a period of use, longer or shorter according to circumstances, either the vision is indistinct or pain is experienced in the eyes themselves, in the orbital regions, or even generally about the head. In many instances the symptoms of distress commence with indestructions, which, if the visual effort be continued, leads on to pain. In many there will be found some form of obstinate conjunctival trouble. In a few the headache is the precursor of sickness, vertigo, palpitation (of the heart) and other symptoms which may collectively occasion the belief that the patient is suffering from some obscure cerebral or cardiac symptoms. The foregoing conditions are conveniently included under the general term of asthenopia, or weak sight-depending, as they all do upon some cause which renders sustained visual efforts impossible. The word is only a convenient way of saying the patient cannot use his eyes for long together, and it requires to be supplemented in every case by one which is descriptive of the precise nature and apparent cause of the affection. In some cases asthenopia is associated with manifest defect of vision; in others the vision is little, if at all below the normal standard.

For many years asthenopia, although known to ophthalmic surgeons, was considered incurable. The ordinary prescription for it was to abandon all our endeavors to use the eyes at near vision and as a means of carrying out this recommendation patients were further advised to become farmers or emigrants.

When Donders discovered the existence and nature of hypermetropia,† he saw at the same time that many cases of asthenopia were dependent on the strain thrown upon the accommodation of the hyperopic eyes, and that such cases could be effectually relieved by the use of convex spectacles. He was even disposed for a time to look upon all cases of profound asthenopia as being of this kind. The increased attention which was soon given to the subject was not long, however, in producing evidence that many asthenopic were not hyperopic, but myopic, and it was assumed by Von Graefe that in these the cause of the distress was in the strain thrown on the internal recti in maintaining the convergence of the visual axis to some given distance. He describes this as muscular asthenopia, and the hyperopic form as accommodative asthenopia and to these two categories nearly all cases of asthenopia were for a time referred.

Later experience has shown that emetropics sometimes suffer from asthenopia and that the causes of the affection may be exceedingly obscure, but still the two forms first mentioned, the accommodative and the muscular, may be taken to include the large majority of the cases which present themselves in ordinary practice. In the former, inability to maintain the accommodative effort; in the latter, inability

to maintain the convergence effort, is the immediate cause of the failure of sight.

I think it must be considered that the liability to asthenopia in any community, whatever may be the immediate cause of the affection in any cause, bears a great relation to the general nerve muscular excitability of the people. In England we are sufficiently familiar with asthenopic patients, and their ailments form an appreciable portion of the claims upon the attention of ophthalmic surgeons.

There can be little doubt that in the United States asthenopia is more prevalent than on this side of the Atlantic. At the International Ophthalmic Congress, held at New York in 1876, two of the ophthalmic surgeons of that city read a paper on asthenopia. One of them founded on an analysis 1,060 cases, all as I understood, observed no general practice. I very much doubt if any one practitioner in any other capital of the world could have cited similar numbers and I feel sure that the conditions of life in America must be largely contributory to the state of things which these numbers disclose.‡

Asthenopia has one universal character, which is that some one or more of the muscles of the eye are unduly fatigued or strained by exercise of the visual function and such fatigue or strain lends naturally to the production of active congestion while it continues, and of passive congestion when the effort is temporarily laid aside. Extending to the conjunctival surface this congestion relieves itself by over-secretion of mucus and leads after a time to hypertrophy of the papillæ and to consequent roughness of the lids. These troubles re-act upon and increase the irritability of the eye and sometimes occasion nutritive changes of a still more serious kind. The chief peculiarity of asthenopic conjunctival affections is their obstinate and recurrent character; and, if any form of conjunctival disorder either resists treatment or shows a marked tendency to relapse after improvement, when the eyes are once more taken into regular use, asthenopia should be suspected and sought for. In many cases the patient will attribute the symptoms of asthenopia to the conjunctivitis and careful examination will be required in order to determine their actual nature.

During many years the ophthalmoscope served to surround cases of asthenopia with all manner of unreal or imaginary dangers. The congestion already mentioned is not confined to the surface of the eye ball, but may extend also to the deeper parts of the organ. Notably to the optic disc and its immediate surroundings. In this region it may give rise to some slight effusion into the fiber layer of the retina.

Congestion of the optic disc and retina when first made known by the ophthalmoscope and when coupled with incapacity for continued use of the eyes, were eagerly accepted as signs of threatened or impending or actual retinitis; and, when coupled with symptoms of head distress as part of the asthenopia, were accepted as signs of impending or actual mischief in the brain. It is wearisome to think of the amount of nonsense which has been talked and written on the basis of these two errors, which have already been answerable for a vast deal of misdirected and even mischievous treatment. The idea of retinitis or brain disease led directly to the prescription of "rest" for the eyes.

Setting aside manifest (intra ocular) inflammations, such as iritis and irido-choroiditis, we may lay down as a rule almost, if not quite without exception, that pain as a result of visual effort is symptomatic of some purely muscular trouble that congestion associated with the pain is due to disturbed or excessive muscular action and that

* Any eye which is not of proper measure within, suggests chronic nasal irritation also.

† A thing which Donders did not discover. Stellwag discovered it.

‡ In the United States the eyes of the middle and lower classes are used hard at an earlier period of life; a large portion of the population are continuously subjected to malarious influences. These facts taken in connection with the severity of climate and its sudden changes, which are a prolific source of nasal and conjunctival diseases, account for this great prevalence of asthenopia on this side of the Atlantic. Statistics, as a rule, are over-drawn, unless subjected to close examination by an impartial commission. I have already said that asthenopia is often associated with conjunctival troubles; and that this should be the case is not surprising.

the remedy is always to be sought in careful analysis of the muscular elements of the visual act, in the relief of any strain which this analysis may disclose and in the regular and systematic employment of the eyes under improved conditions. To rest asthenopic eyes may be to relieve them from pain while the rest continues, but such relief is dearly bought at the cost of rendering the disused muscles even less fit for exertion than they were before.

The brain trouble which occasions loss of sight, e. g., intra crainial tumors, may be associated with headache, but only with headache which is independent of visual effort; and retinal affections such as neuro retinitis leading to nerve atrophy and the like, are even characteristically painless.

The attention of the patient is usually first called to them by the discovery that the sight is fading away without pain. I have come to regard pains other than glaucomatous or inflammatory pain as a symptom which alone is almost sufficient to justify a favorable prognosis in any case of imperfect or conditioned vision.

The description of the nature of asthenopia is thus far plain and very readable.

There is a large list of neuralgic troubles which our author has neglected to dwell on.

The connection between nasal catarrh and asthenopic troubles has also been neglected.

The form of asthenopia due to a stretching eye ball as in the young who first commence to develop myopia has also been overlooked. The subject will be continued.

The school of optics has been patronized by one hundred and thirteen students, all of whom are doing remarkably well.

The teaching is largely object teaching and cannot be imparted by mail as I am so frequently requested to do.

The class will form Sept. 18, at 2 P. M. Students should give early notice of their intentions when desiring to join the class.

Obituary.

MYER LICHTENAUER.

THE death of Myer Lichtenauer, the well-known diamond dealer and expert, occurred on August 14th.

Mr. Lichtenauer was born in Germany in 1810, and came to America thirty years later. He went into partnership with L. Frank, as clock dealers, in John street, and in 1885 the partnership was dissolved, and the business continued for some time by Mr. Lichtenauer alone.

It was during the war that Mr. Lichtenauer went with Mr. Chas. Wm. Schumann, then at Liberty and Nassau streets. About this time Mr. Lichtenauer became noted as an expert in diamonds, and his judgment of values in precious gems has ever since been considered exact. In 1870 he started in the diamond business alone and was quite successful. During the depression in this branch of trade in 1879, he was forced to make an assignment which left him quite poor. But his knowledge of diamonds did him a good turn, for he was enabled to start again in a small way as a broker and dealer. He has thus gradually acquired a goodly competence, and leaves a widow and seven children in good circumstances.

He died of a complication of diseases and after only a short illness. His funeral was quite largely attended, and many floral pieces were sent by his friends. He was well known in the jewelry district, where his face was a familiar one. Always seen in converse with some large dealer in stones where his judgment was sought.

A. C. BENEDICT.

A. C. BENEDICT, one of the oldest jewelers in this city, died of dysentery, on August 8, at Tarrytown, N. Y.

Mr. Benedict was born in 1802 in the village of New Canaan,

Conn., and came to New York City at the age of seventeen. He entered the employ of his uncle, the late Trowbridge Benedict, who shortly before had opened a jewelry store at 28 Bowery. The firm name afterwards became Benedict & Scudder. In 1833 A. C. Benedict bought out his uncle's interest, the firm name being left unchanged. In 1837 Mr. Scudder withdrew and Lewis C. Benedict entered the firm, and the style was changed to A. C. Benedict & Co., and has remained the same ever since.

In 1848 A. C. Benedict became the sole proprietor in the concern, and from 1849 to 1854 William S. Tarbell was associated with him. Mr. Tarbell came again as an employee in 1861, and was admitted to partnership in 1878, withdrawing again in 1885. Meanwhile Mr. Robert S. Ferguson, who entered the employ of the firm in 1856, was also admitted as a partner in 1878, and has continued a partner ever since. He succeeds to the entire business and will continue at the old place under the same style.

For the last ten years Mr. Benedict has not taken a great active interest in business. He had been living during the past summer at Tarrytown, where he met with a fall on July 3. From the effects of the fall he never recovered completely, and at his great age his recovery was hardly looked for. He leaves a wife and four married daughters. His body was interred in Greenwood Cemetery.

TICKLISH RHYME.

Tick! tick!
A maid was sick;
Her heart was heavy,
Her tongue was thick.

Tick! tick!
Beat strong and quick;
Quaintly covered
With coin and nick;—
Your *timely* appearance,
So span and spick,
Has cured the maiden—
So long may you tick!

Tick! tick!
For neat and slick
As the magical change
In a conjurer's trick,
Was the happy effect
Of your rhythmic click.

Then tick! tick!
And closely stick;
A maid more gentle
'Twere hard to pick;
Pardon the slang—
But she never will *kick*
While you keep up your musical
Tick! tick!

DE LANCEY STONE.

Audible Unrolling of the Mainspring.

IT HAPPENS occasionally that the mainspring will make a peculiar grating noise in the barrel while in the act of unrolling. The repairer should, if possible, correct, because it may occasion other errors, and the power exerted by the mainspring must necessarily be unequal. It is most generally caused by the scant turning out in the barrel; the spring in the act of unfolding in the contracted barrel space must naturally scrape on the cover or bottom. The spring may also, when it grates in one of the common clocks where the barrel wheel supplies the place of cover, catch on the dial, especially when this is too thick or shaky. Burr inside the barrel may also cause the audible development of the spring.

The Lick Observatory.

THE completion of the Lick Observatory is an important event. One of the best equipped observatories extant, as favorably situated for observation as any astronomical station in the world, it is thus opened for work. It appears, however, that the future of the new observatory is not yet secured, the original endowment fund having been so nearly exhausted in buildings and equipment, that the income from what remains of it will barely suffice to maintain the director and leave nothing for the working expenses of the institution. This is an unfortunate situation, nor does it appear probable that the California State University, which is to have charge of the Lick Observatory, can spare from its own sufficiently restricted means the wherewithal to supply the deficiency. Undoubtedly the importance of the observatory to science is great enough to warrant the people of California in appropriating what is necessary from the public treasury, and, failing other methods of adjustment, we presume this course will be taken, since it is not credible that so enlightened and so proud a commonwealth would permit the noble bequest of one of its pioneer citizens to be nullified, and so splendid an apparatus to be lost to the purposes of scientific research.

The scientific world will look to Mount Hamilton for new and important discoveries. The great objective which has cost Alvan Clark & Co. so many anxious hours is expected to justify the pains and cost required in its manufacture. Moreover, it is placed on perhaps the best site for observation hitherto occupied for sidereal research, and much is anticipated alike from the skill and judgment of the director, the excellence of the instrument and the peculiar atmospheric advantages of the situation. To have all this reasonable hope and expectation thwarted and baffled at the moment when every preparation for action has been completed, would be calamitous. To submit to such a check merely for the want of a little money would be anything but creditable to the people of the State to which the Lick Observatory belongs. It would, moreover—and this is the most encouraging reflection—be entirely out of character. California does not do things in that way. Her views are large, her enterprise is great and her liberality proverbial. Therefore, we expect to hear speedily that all difficulty as to the endowment of research has been removed.

Brief History of Timepieces.



AT A RECENT meeting of the Balloon Society of Great Britain, an address was made by Mr. James Kendal on "The British Watch Industry." The lecturer stated that the sun dial of Ahaz is the first record of a timekeeper, that the obelisks of the Egyptians were intended as gnomons, and that the next record of a sun dial was the hemicycle of the Chaldean astronomer, Berosus, 450 B. C. The clepsydra, or water clock, was the next contrivance for measuring time, used by the Chaldeans; but to whomsoever the early discovery of timekeepers may be due, he said that clocks were set up in churches as early as 1174, and in the reign of Henry VI. a pension was granted to the Dean of St. Stephen's for taking charge of a clock in Palace Yard, Westminster. In 1326 Richard Wallingford, abbot of St. Alban's placed a clock in his monastery which showed the hours, the motion of the sun, the changes of the moon, the ebb and flow of the tide, etc., and the account of this clock is still preserved in the Bodleian Library at Oxford. In 1340 Peter Rightfoot, a monk, of Glastonbury Abbey, made a clock which, at the Reformation, was removed to Wells Cathedral, and the original is now to be seen at the South Kensington Museum. The clock for the Strassburg Cathedral was begun in 1352, and finally completed in 1574 by Conradus Daspodius.

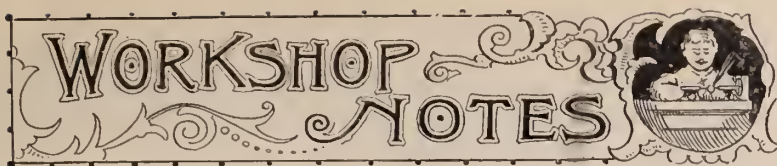
The use of the pendulum for securing accuracy of time was first adopted by Vincent Galileo in 1648, and the anchor escapement for

regulating it by Dr. Hook, 1666; and he stated that little progress was made since that time until Mr. Dennison, now Lord Grimthorpe, designed the clock for the Victoria Tower of the Houses of Parliament in 1854. The most remarkable episode in the construction of timekeepers is the lever escapement, invented by Thomas Mudge in 1770, the last epoch in the history of the watch. The progress of the last fifty years in watch making has consisted rather in the perfection of proportions than in the introduction of new principles, for even the invention of winding from the pendant instead of a watch key is tardy appreciation of an invention patented more than half a century ago.

At the International Inventions Exhibition of 1885, Kendal & Dent exhibited a horological novelty of a watch with two dials placed back to back, with the movement between them. On one dial was marked the old divisions of twelve hours, and on the other the suggested hour circle with twenty-four divisions, and this invention attracted considerable attention from horologists and mechanics. Mr. Kendal then referred to the important uses to which timekeepers are devoted by the use of marine chronometers to enable the navigator to ascertain his longitude as he travels over the sea. In 1714 the English government offered a reward of £10,000 for determining the longitude to within sixty miles, £15,000 within forty miles, and £20,000 within thirty miles; and this reward was secured, after thirty years of unremitting labor, by John Harrison, a carpenter, of Faulby, in Yorkshire, who succeeded, in 1764, in producing the present marine chronometer.

A Mysterious Horologe.

A STAID old gentleman living on Park place has recently been much disturbed in the nice order which regulates his movements in life. For twenty years he has regularly eaten breakfast at 7:30 o'clock, left the house at 8, dined at 6, read or conversed until 10, and then gone straightway to bed. There was one clock in the house, on the dining-room mantle, by which the old gentleman moved and had his being. That was his standard in the house, and until he went out he never thought of consulting any other clock nor his watch; it didn't vary a minute from one week to another. Two weeks ago a new domestic was hired who liked late hours at both ends of the day. She was reprov'd for this severely, for twice breakfast was not on the table until a quarter to eight. After the first week, however, everything went well; breakfast was punctual to the moment. One day the old gentleman engaged himself to meet a man at his office at 8:30 the next morning. "You know how punctual I am," said he. "I shall be here on the moment." When he entered his office the next morning the man was there, and with an impatient gesture he said: "Yes, you are a punctual old duffer, ain't you? Here it is a quarter after nine." "What!" said the old gentleman; "I left the house twenty-five minutes ago, and it was then eight o'clock by my clock." "Well, your clock's wrong, then," said the man. The old gentleman was indignant. The first thing he did on going home was to compare the clock with his watch. They agreed to a second. The next morning he intended to take the 9 o'clock train to the Falls. He took his time, of course, by his infallible clock, got down to the station and found the train had gone fifteen minutes before. The old gentleman was enraged. "What the dickens ails things, anyhow," he growled to himself. The next morning when he came down to breakfast he compared the clock with his watch. The former indicated 7:30; the latter 8:15. He said nothing until the following day, when he crept down stairs at 7:15 and hid behind a door. A few minutes later the new domestic came down and got breakfast. The old gentleman could see the clock from his place of concealment. The hands had crept round to about 8:15 when the girl came in, opened the door of the clock, turned the hands back to 7:30 and rang the bell for breakfast. Then the old gentleman popped out from his hiding place. The maid shrieked; the old gentleman swore. Two hours later the domestic was seeking a new situation and the clock was resuming the even tenor of its way.—*Buffalo Courier*.



HALF HOUR STRIKING.—The usual way of getting a clock to strike one at the half-hour, is by making the first tooth of the rack lower than the rest, and placing the second pin in the minute wheel a little nearer the center than the lower pin, so that the rack hook is lifted free of the first tooth only at the half-hour. But this adjustment is too delicate, and the action is liable to fail altogether, or to strike the full hour from the pin getting bent or from uneven wear of the parts. The following arrangement appears to be much safer: One arm of a bell-crank lever rests on a cam fixed to the minute wheel. The cam is shaped so that just before the half-hour, the other extremity of the bell-crank lever catches a pin placed in the rack and permits it to move the distance of but one tooth. After the half-hour has struck the cam carries the catch free of the pin.

TO TRUE A WHEEL.—When the teeth are found to be in good condition, says C. Saunier, but the wheel does not run true, or one or more of its arms are strained, the fault can be corrected in a case of absolute necessity, as follows: Remove the pinion from its wheel, enlarge the central hole in the lathe or mandrel, and rivet or solder it in a brass ring that is slightly thicker than the wheel, and perforated with a smaller hole than that required for the riveting. Now center the wheel from its circumference; increase the central hole with the slide-rest cutter, and turn down the two faces of the ring level with the wheel. Rivet the pinion in its place, after testing the truth of its riveting-neck, when the wheel should be found to turn both true and flat. If the wheel under repair is likely to be subjected to much force, at least two small notches should be left in the enlarged hole in the wheel to receive corresponding projections in the brass ring.

TO REPAIR A DAMAGED WHEEL.—If the crossings of a wheel are broken, and the wheel cannot be replaced, it must be chucked in the lathe, and the arms turned out with a graver, the inner edge of the rim at the same time turned circular, and a step turned on the edge where the metal is to be left one-half its original thickness. Take another wheel of the same size and thickness, or a plain disc, and turn it of the same diameter as the outer ridge of the step; reduce its thickness at the edge by one-half and a disc will thus be obtained with a ridge round the edge corresponding exactly with that of the wheel, and the one will fit in the other. They are, of course, soldered in this position, care being taken to prevent the solder from reaching the teeth, and the old wheel will in this manner be provided with a new interior. If the disc is made to fit closely on the upper side, a wedge-shaped ring being left to receive the solder, the joint will be scarcely perceptible on the exposed face, even with a glass.

TO HARDEN GOLD SPRINGS.—Gold detent, thermometer, suspension and balance springs can be imparted a higher degree of elasticity. Rolling hardens them, but they are rendered very brittle thereby. They can be made supple and elastic, not by hardening, as in the case of steel, but by annealing, care being taken not to exceed a certain degree of heat. The spring may be coiled on a block, and placed in a tube with a smooth steel lid, then heat the tube in the flame of a spirit lamp, and as soon as the steel is of a blue temper, remove the flame and allow the whole to cool.

DIRTY OILSTONE.—An oilstone thoroughly saturated with oil is often cast aside, but if it is soaked in benzine for two or three days it will be as good as new. The ordinary animal and vegetable oils are not so suitable for use with the oilstone as petroleum, especially for setting small tools. A mixture of glycerine and alcohol is even better than petroleum for watchmakers' tools, or glycerine alone may be used. Glycerine has the advantage of neither evaporating nor clogging, as oil is apt to do.

THE INGOLD FRAISE OR CUTTER.—The Ingold fraise is a small cylinder perforated through the axis, so as to be mounted on an arbor, and having a number of longitudinal notches on its circumference, which makes it resemble a pinion, the points of whose leaves have been ground off. The spaces of the fraise are of the exact form required to be given to the wheel teeth, and their surfaces are covered with fine file cuts, so as to enable them to remove metal from the wheel operated on. Having mounted the arbor that carries it between two centers of a depthing tool (made specially strong for the purpose), the wheel is supported by its axis between the second pair of centers (with guard pin points). If now the fraise be advanced by the screw until its teeth engage with those of the wheel, and either be caused to rotate, it will drive the others, and the fraise will then shape the teeth to a pre-destined form, the faces of each notch acting the part of a minute file introduced between the teeth. It will be observed that such an instrument is preferable to the ordinary rounding-up tool, in that it may be relied upon to bring up all the teeth to the same shape.

RECOVERING GOLD.—To recover gold from old watch parts or other articles, an exchange says, to take equal quantities of saltpeter and borax, and dissolve them in a small quantity of water. Next red-heat the gilt pieces and plunge them into the solution. By repeating the operation several times, the gold will flake off and precipitate in the fluid.

TO STRIP SILVER.—To strip and re-cover the silver from plated articles, get an enameled pot and put strong sulphuric acid and a little saltpeter into it. Place the pot on the fire and boil, then immerse the articles in the solution till the silver is stripped. Add saltpeter till the silver is quite off, then dilute the solution very much with cold water, and place a sheet of zinc in it. This will throw the silver down in metallic state. When it is all thrown down, pour off the liquid, and wash the silver three or four times, then melt and roll out for anode.

FROSTING STEEL WORK.—After the work has been prepared with a surface free from scratches, it is rubbed with a short backward and forward motion on a small glass slab with a thickish paste of oilstone-dust and sweet oil. Before mixing this paste, look over the pounded oilstone with a very strong magnifying glass, and carefully remove all the black stones which, if left, would inevitably scratch the work. The work is cleaned and finished by rubbing in a circular direction with pith, or, instead of rubbing with pith, the work may be carefully breaded and immersed in benzine.

GOLD LACQUER FOR BRASS.—Resinous coatings always are open to the objection that they are never smooth, and are, on close inspection, easily recognized. A coating of a very close imitation of gold is produced in the following manner: The article is polished with joiner's polish and linseed oil, adding a little saffron to the former, in exactly the same manner as fine furniture is polished. Such a coating is entirely homogeneous and uniform, and of a thorough gold-like appearance; on account of its smoothness it cannot be seen.

FROSTED GLASS.—Verre gioré, or hoar-frost glass, is an article now made in Paris, so called from the pattern upon it, which resembles the feathery forms traced by frost on the inside of the windows in cold weather. The process of making the glass is simple. The surface is first ground either by the sand blast or the ordinary method, and is then covered with a sort of varnish. On being dried, either in the sun or by artificial heat, the varnish contracts strongly, taking with it the particles of glass to which it adheres; and as the contraction takes place along definite lines, the pattern produced by the removal of the particles of glass resembles very closely the branches or crystals of frostwork. A single coat gives a small, delicate effect, while a thick film, formed by putting on two, three or more coats, contracts so strongly as to produce a large and bold design. By using colored glass, a pattern half-tint may be made on the colored ground, and after decorating white glass, the back may be silvered or gilded.



DIAMOND SCALES.—"Diamond scales are now being brought to such a state of perfection that we will soon be able to detect flaws in stones by the minute variation in weight. That handsome piece of mechanism in the cherry case over there is one of the very latest improved balances. I do not find the least difficulty in accurately weighing a six-hundred-and-fortieth part of a karat with it, and believe that I could easily go beyond that if I wished. When I think of some of the crude balances formerly used, and which were then thought all but perfection, it makes me wonder what our sons will be using instead of the handsome scales now in the market. For our purpose, however, a scale which accurately weighs one sixty-fourth of a karat is preferable to the more delicate ones, for, as you know, we rarely weigh less than that, and the latter are so sensitive that they often give us trouble in obtaining a balance."

GOLD IN GREAT BRITAIN.—Although it is not generally known, there existed formerly in Great Britain, in Wales, Ireland, and even Scotland, "diggings" quite as rich as some which subsequently proved mines of wealth in California and Australia. In Richard the Second's time hosts of mines were "located," berg "manner" were actually brought from Bohemia to work them, and the records of the years succeeding are studded with royal quests to work real or fancied mines of the metal. It is, indeed, believed that some of the coin of the period was made out of the native gold, though the chances are that, to avoid the royal dues, a large portion was concealed or made into ornaments. In Scotland, David I. granted a gold mine in Fifeshire and about thirty years ago there was something like an "excitement" over the attempts made to resume the working of these long abandoned deposits.

HANS HOLBEIN'S DRAWINGS.—A few years ago the trustees of the British Museum gave permission to a firm of Paris, France, to photograph the rich collection of Hans Holbein's preserved in that national institution. These will shortly appear in the form of a folio volume, containing a selection of that master's best works, executed in pen and water-colors. Worthy of attention are general designs for cups, clocks; and jewelry designed itself for Henry VIII., showing the versatility of Holbein's powers as well as the unusual thoroughness of his execution as an artist. A fine ornamental composition with the pen and washed with Indian ink is the design for a clock for Sir Anthony Denny, presented by him as a New Year's Day present to the King in 1544. This fact, however, is recorded on the drawing itself, which at onetime belonged to Mariette, the celebrated French collector, and to Horace Walpole. Another design represents a chased and jeweled cup, having on it the initials of Henry VIII., and Jane Seymour, and the motto "Bound to obey and serve." A superb design for the hilt and sheath of a dagger in Indian ink, formerly in the Hugh Howard collection, and purchased for the British Museum in 1874. Finally, a design for a seal of Charles Brandon, Duke of Suffolk, in honor of Richmond. It consists of the Duke's crest within the garter, and on an outer circle is inscribed, "*Carolus Dux Sufficie pro honore suo Richmond.*"

THE LICK OBSERVATORY.—After thirteen years, the Lick Observatory at Mount Hamilton is completed, and on June 1, 1888, was formally transferred by the Lick trustees to the State University. The original endowment was \$700,000, which with interest brings the sum expended up to nearly \$1,000,000. The observatory and instruments are valued at \$750,000. The trustees rendered an account of their stewardship on the same day, and turned over with the observatory property, \$90,000—all that remains of the fund. This will not bring in more than enough to pay the salary of the

director. It is estimated that it will cost \$30,000 a year to carry on the observatory; so that a deficit of \$25,000 falls on the University. It is doubtful if the institution can furnish this amount, and an attempt will probably be made at the next legislature to get the state to set aside a fund for the maintenance of the observatory.

A LARGE CLOCK.—A new clock weighing $2\frac{1}{2}$ tons has just been placed in the tower of the Glasgow University, Scotland, similar to the great clock at Westminster. The frame of the clock newly erected is horizontal, and of cast iron, planed. It is $6\frac{1}{2}$ feet long, 2 feet wide, and $1\frac{1}{2}$ feet in depth. It is supported on beams built into the walls of the tower so as to obviate vibration. The wheels, which are of gun metal can be moved separately, as the pivot holes are screwed to the frame. The main wheels of the striking and quarter train are 20 inches in diameter, and attached to them are cams that lift the hammers, which are fixed in iron frames connected with the clock by cranks, and having a check spring to prevent vibration. The weight of the hammer that strikes the hour is 120 lbs., and it is lifted 10 inches. There is an automatic apparatus attached to the clock, which stops the quarter peals at night and starts them in the morning. The escapement of the going part is known as the double three-legged gravity, invented by Lord Grimthorpe. The pendulum is of zinc and iron to counteract influences of temperature. The tubes are arranged so that the expansion of one raises the center of gravity, while that of the other lowers it. The bob of the pendulum is cylindrical and weighs 3 cwt., and the beat is $1\frac{1}{2}$ seconds. The "bolt and shutter" appliance of the nobleman already named maintains the motion while the clock is being wound.

RARE WORK OF ART.—About two years ago, a peasant woman brought a picture, wrapped in a cloth, to Temesvar, and offered it to several rich people for sale. She stated that the picture (a relief cast in silver), was the property of an old impoverished noble family. A Mr. Nathan bought it for a small sum on account of its antique appearance. He tried to sell it again, but without success, and finally left it for sale with a jeweler of the town, who kept it in his show case for a long time. A Mr. Timary, of Belgium, traveled through Temesvar, and bought the picture for ten florins. When he showed his purchase in Brussels, he was at once offered 10,000 francs, and the Museum of Brussels offered 50,000 francs for it, it being the veritable masterpiece of the celebrated founder, Peter Vischer (born 1455, died 1529), of Nuremberg, and represents Roman gladiators fighting.

THE TRIAL OF THE PYX at Goldsmiths' Hall, London, England, is one of the most interesting ceremonies remaining to the guilds of the city. It is the final trial by weight and assay of the gold and silver coins of the United Kingdom of Great Britain, prior to their issue from the mint. It is so called from the pyx (box or chest), in which are deposited specimen coins. When the coins are weighed into bags at the mint, two pieces are taken out of each bag, one for assay within the mint, the other for the pyx. The latter are sealed up by three officers and deposited in the chest or pyx. The trial takes place about once in three years by a jury of goldsmiths, summoned by the lord-chancellor. The jury are charged by him, at the exchequer office, Whitehall, in the presence of several privy-counsellors and of the officers of the mint. Being furnished with a piece of gold and silver from the trial plates deposited in the exchequer, they are required to declare to what degree the coin under examination deviates from them. The jury then proceeds to Goldsmiths' Hall, where assaying apparatus is in readiness, and the sealed packets of coin being delivered to them by the officers of the mint, are first tried by weight, after which a certain number of pieces taken from the whole are melted into a bar, from which the assay trials are taken. A favorable verdict relieve the officers of the mint from responsibility and constitutes a public attestation of the standard purity of the coin. It is an ancient custom, many centuries old.



—Among the dealers noticed in town during the last month, we mention the following: L. O. Stevens, Atlanta, Ga.; W. Sweigert, Augusta, Ga.; W. H. Hannegan, C. H. Myers, Baltimore, Md.; Mr. Black, Birmingham, Conn.; C. F. Morrill, P. A. Bachelder, Boston, Mass.; J. H. Lee, J. Block, Buffalo, N. Y.; O. Young, J. H. Walker, Chicago, Ill.; C. H. Dumhe, Cincinnati, O.; P. L. Miles, Cleveland, O.; D. R. Kinsel, Columbus, Ga.; G. T. Tress, Columbus, O.; J. W. Webb, J. Taber, L. Knepfly, Dallas, Texas; J. Nelson, Dunkirk, N. Y.; A. La France, Elmira, N. Y.; M. Preusser, Grand Rapids, Mich.; J. Thompson, Hamilton, Ontario; Wm. Glover, Jr., Hazleton, Pa.; J. H. Crosby, D. Greenleaf, Jacksonville, Fla.; H. Curtis, Knoxville, Tenn.; H. Z. Rhoads, A. Bowman, Lancaster, Pa.; M. B. Hall, Liberty, N. Y.; J. H. Kelsey, of Middletown Plate Co., Middletown, Conn.; Leonard Krower, New Orleans, La.; Sol. Bergman, Omaha, Neb.; J. C. Woelfle, Peoria, Ill.; J. W. Young, Petersburg, Va.; G. E. Goddard, Pittsburgh, Pa.; H. C. Cohn, Rochester, N. Y.; C. F. Klein, San Antonio, Tex.; L. Nordman, G. S. Simons, Moses L. Levy, San Francisco, Cal.; J. Linz, J. Cook, George E. Cook, Sherman, Texas; W. Beck, Sioux City, Ia.; A. S. Mermod, F. Mathey, St. Louis, Mo.; T. B. Myers, St. Paul, Minn.; J. A. Jerger, Thomasville, Ga.; M. J. Segsworth, Toronto, Ontario; J. P. Walton, Tyrone, N. Y.; M. Levine, Waco, Texas; C. A. Shafer, Washington, D. C.; S. L. George, Watertown, N. Y.; I. G. Dillon, Wheeling, W. Va.; C. C. Mussina, Williamsport, Pa.; W. F. Doll, Winnepeg, Manitoba; A. H. Bonnet, Zanesville, O.

—Among the dealers who have sailed for Europe since our last issue, we note: J. J. Joslin, of Joslin & Park, Salt Lake City, Utah; C. F. Mathey, of Mermod-Jaccard Jewelry Co., St. Louis, Mo.; S. Wallach, Isidor Stern and Henry Herwitz, of Stern Bros. & Co., and Chas. W. Ward, general manager of the Non Magnetic Watch Co.

—Among the dealers who have returned from Europe since our last issue, we note: Herbert Cockshaw, C. W. Schumann, George E. Fahys, L. H. Keller, W. T. Gough, of Carter, Sloan & Co., Charles D. Pratt, of the Chas. D. Pratt Co.; L. Nordman, of San Francisco; H. S. Oppenheimer, E. L. Anrich, L. W. Levy, of Levy, Dreyfus & Co.; David Untermeyer, James W. Miller and Eugene W. Miller, William H. Kennard, of Bigelow, Kennard & Co., Boston; L. O. Stevens, of Atlanta, Ga.; C. H. Dumhe, of Cincinnati, L. S. Stowe, of Springfield, Mass.; F. Rolshoven, of Detroit, Mich.; H. Z. Rhoads, of Lancaster, Pa.; F. H. Mulford, B. B. Lederer, A. Frankfield, Leon Glaenger, E. W. Holbrook, of the Gorham Mfg. Co., C. C. Mussina of Williamsport, Pa., Philip Bissinger and John F. Stratton.

—Jago & Niblock have opened a store at Port Townsend, W. T.

—Mr. D. E. Shoup has removed from East Liverpool, O., to Nashville, Tenn.

—Mr. F. H. Unruh, formerly of Hague, Va., has removed to Washington, D. C.

—Mr. E. B. McClelland, of Syracuse, has opened a branch store at Cazenovia, N. Y.

—Mr. John C. Matthews, Bordentown, N. J., has succeeded the firm of Bills & Matthews.

—The Seth Thomas Clock Co. have put up one of their best tower clocks at the Union Station at Indianapolis, Ind.

—Mr. E. H. Ayres, Elmira, N. Y., who was burned out recently, has fitted up an establishment at 140 West Water street.

—Edward P. Baird & Co., Montreal, Que., have started the manufacture of clock cases, for which they will import Seth Thomas and Ingraham movements.

—The business of Zenas Lane, of Mechanics Falls, Me., has been bought out by Mr. Wilson S. Richards, formerly in the employ of his father in South Paris, same State.

—The American Waltham Watch Co. recently recovered nearly 4,000 ounces of silver from a cistern which catches the waste from the sinks in the case department of their factory.

—Messrs. Eugene Naegel, John N. Price and Arthur J. Fort, of Camden, N. J., have filed articles of incorporation of the Naegel Watch and Jewelry Co., with an authorized capital of \$100,000.

—The business of Potter, Read & Co., Providence, has been sold at auction, the purchaser being Mrs. Ezra P. Lyon, who will continue the business under the management of Mr. Read, a member of the old firm.

—The Rockford Silver Plate Co. are pleased with their present business, and report flattering prospects for the coming season. They are issuing a new catalogue, which can be had by responsible dealers upon application.

—Mr. Richard Tipping, formerly of Apponaug, R. I., has removed to 16 Julian street, Providence, R. I. He has 10 volumes of THE CIRCULAR, for which he has no room in his new locality, and for which he is open to offers.

—A novel idea in dials for tower clocks is that one shown in a large clock at Massillon, O. The dial has a large letter "I" in the places of the usual numerals, and it is said the time can be more distinctly read at great distances.

—The stock of the late E. Lilienthal, New Orleans, La., was sold at auction, and realized over \$500 more than the appraised value. The open accounts of the deceased still remain to be sold, the prices offered having been considered too low.

—Cogswell & Wallis, of Chicago, who have laid in a heavy stock of campaign goods, in which they are doing a large business, have published a little pamphlet which contains excellent wood cut pictures of the candidates, short sketches of their lives, political statistics and figures, etc. The book is very much in demand, and is sent out free to their patrons.

—The Rockford Watch Case Co. have a new feature in their business, viz., that of repairing old watch cases, re-engraving and otherwise refinishing them for stock, so they can be sold instead of selling them for old metal. They have built up quite a business in this branch alone. They also make a line of non-tarnishable Spanish silver cases at popular prices.

—An annual meeting of the stockholders of the Cheshire Watch Company was held at the factory in Cheshire, Conn., on July 24, and the following named directors were elected: G. J. Capewell, E. R. Brown, E. A. Cornwall, Joel J. Bailey, Alonzo Granniss, C. M. Platt, F. F. Street, Timothy Guilford and J. L. Porter. It is said that the company will shortly put on the market a new watch, to cost a trifle more than the ones now manufactured.

—A. C. Radcliffe, a broker for several large diamond firms, formerly a dealer in glazier's diamonds, is the latest absconder of his class. He has decamped with goods valued at between twenty and thirty thousand dollars. He had an office at 82 Nassau street, and has been known in the trade for about fifteen years. He was reputed to be worth over \$10,000, and gained a good credit with the several firms from whom he got diamonds to sell on commission, in some cases buying the goods and paying for them with his own check. The firms who have been victimized by Radcliffe were surprised at his disappearance and would not have believed it were it not for the strong evidence in their hands. In most of the cases he bought quantities of precious stones, and presented in payment for them a check dated ahead on a bank in Jamesburg, N. Y., which afterwards proved valueless. The private life of Radcliffe, notwithstanding his high standing with some in the trade, is said to have been not very moral. Radcliffe is being tracked by detectives, and it is thought likely he will soon be captured.

—Alfred Pettit, a Frenchman, of Newark, N. J., committed suicide last month by jumping off a railroad train. He had frequently made vain attempts to take his life, but each time was prevented. It is thought that the cause of his suicide was the intense regret and remorse which followed his occasional spree.

—The New Haven Clock Co. show at their various salesrooms, a fine array of novelties in clocks, the new patterns of the present season being particularly conspicuous. Paper-weights and desk ornaments with clocks set in them are shown in various styles. The more staple kinds of clocks are also shown in a large variety of new designs.

—Max Lehrfeld, a well known and skilful jewelry workman, of North Attleboro, Mass., died recently after a long illness. He was born in Germany in 1847, and came to this country in 1879. His knowledge of the jeweler's art and his skill as a workman brought his services into demand, and he was employed in various large shops in the East. He leaves a wife and two children.

—The Middletown Plate Co., are about to issue a new catalogue of their goods containing all their latest designs in plated ware. Full stocks are kept at the New York and Chicago offices of this company where dealers can be promptly served with their choice of the fine assortment of goods on exhibition. The northwestern dealers can trade as well at the Chicago branch as in the east.

—The United States Marble Clock Co. has an important announcement in this issue. The principal product of this company is a patented composition marble case for clocks. The composition of which the case is made, is extremely hard, taking as high a polish as the real stone, and retaining it fully as well if not better than the real stone. Attention is called to the advertisement on another page.

—The citizens of Rochester, N. Y., are booming their town "for all it is worth." They are endeavoring, through their Chamber of Commerce, to induce large manufacturers in several important industries to locate there, offering land and money. They are in earnest in their endeavor to have a watch factory established, notwithstanding the many failures of such enterprises. Our "On the Road" correspondent writes from Rochester this month.

—Mr. F. H. Bassett, of Saranac Lake, N. Y., who recently fitted up his store in a very handsome manner, will shortly lay in a diversified stock of goods in addition to his full line of jewelry, etc. On account of the sharp competition with other merchants in his town who are not jewelers, but carry all sorts of goods under the classification of jewelry, he has decided to adopt the method advocated by THE CIRCULAR, viz., to "fight fire with fire." His new lines will include many things handled by his competitors.

—S. F. Myers & Co. have lately erected in the center of their large store a four foot wheel, run by a two-horse power electric motor, which draws the heat out of the store, up through the building to the roof, and thus keeps the atmosphere at a very cool temperature, making it very comfortable for their employees. The firm spares no expense in continually adding improvements to their handsome establishment. They are beginning to show in their numerous departments many novelties to please their visitors for the coming fall.

—King & Eisele, Buffalo, gave their employees an outing on the 21st of July last. There were over 70 in the party. The trip down the Niagara to Sheenwater was thoroughly enjoyed by all, and some of the party indulged in health-giving sports and returned to their homes refreshed. King & Eisele's new factory is fitted up with all the latest improvements, both for the health of employees and facilitating of business. The factory is 50x120 feet, built of brick, four stories high. It is located at 198 and 200 Terrace street. Here they make solid gold rings, their specialty, in large quantities and in many styles. This firm has its salesrooms at 283 Main street, where they carry a large stock of jewelry, diamonds, watches, clocks, silverware, tools, material, etc. They sell to the retail trade direct.

—The Waterbury Clock Co. have issued a new catalogue which can be had on application. Their new patterns this fall surpass anything they have ever before attempted. In iron clocks especially, for which a growing demand is noticeable, this company have just made some new patterns which are elegant. They are made in modern styles after the best patterns of marble clocks and are quite as handsome as the genuine marble. Dealers will find a full line at the New York office.

—The Wm. L. Gilbert Clock Co. have added to the number of designs in their popular "Plastic Marble" clocks. These clocks are said to equal marble clocks both in regard to style and finish, and in the quality of the movement put in them. The prices are quite as low as the iron clocks over which they have some advantages, one being that their surface is perfectly smooth and even and the polish consequently more effectual. Full lines of these clocks can be seen at the New York and Chicago offices.

—A man at Prague, Bohemia, swallowed a small watch with chain attached, which a joker had slipped into a glass of beer while the man's back was turned. The metal dissolved by the acids of the stomach, has poisoned that organ and keeps it in an incessant state of fever, making him unable to retain food. The man has been dismissed from the Munich hospital, and now lies in a hospital at Prague, kept alive by food artificially injected, waiting to see whether the watch will dissolve or he will die first.

—S. F. Myers & Co. recently discovered that they were being systematically robbed by their colored porter, J. J. Casey. He dressed flashily and seemed to live beyond his income, and, a detective being detailed to watch him, he was discovered in the act of trying to dispose of a watch he had taken from the store. When arrested, he pleaded guilty to the theft. The firm say that they believe he has increased his income for some time past in this manner, for pawn tickets representing other watches were found on his person.

—The New York *World*, in a recent investigation into the older portions of the city with a view to finding out whether they are safe places in case of fire, specifically describes the block bounded by John street, Nassau street, Fulton street and Broadway, as one of the "ramshackle rookeries" and "unlighted funeral pyres" of the city. The *World* shows the small chances for life of the working people in the rear buildings at 17 John street and 77 Nassau street, and does not exaggerate beyond the truth. It only needs a big fire to prove it, but we hope the owners will follow the example of Mr. Austin Corbin and tear down the old buildings to build anew.

—Sumner Bros., of Cleveland, O., are special agents for the sale of the Deuber Watch Cases and the Hampden movement. They send selection packages on application to responsible dealers. The character of the Deuber cases and Hampden watches is well known to the trade, and their popularity is attested by the fact that they are being sold in larger quantities than heretofore and that both companies are at present greatly increasing their facilities. The new factories of the two companies in Canton, O., are almost completed; that of the Hampden Watch Co. being already occupied by as many workpeople as can be accommodated at the benches and in the different departments.

—George J. Levy, a young man who was recently captured pawing a watch for which he had given a bogus check to C. W. Schumann & Sons, has been sent to the Elmira Reformatory. Young Levy had previously tried his trick upon several jewelers and other tradesmen. His method in all cases was nearly similar to that he used with the Schumanns. He entered the store hatless and breathless, saying he was the son of a well known merchant around the corner, mentioning a prominent name. He said his father had offered to give him \$75 for a gold watch. Selecting one at that price he left the store and presently returned with a newly written check for that amount. His scheme was such a plausible one, and his method so natural that in three or more instances he was successful in making victims.

—Mr. E. W. Holbrook, of the Gorham Mfg. Co., arrived from Europe with his family August 24.

—Goldsmith & Casperfield is the name of a new firm about to open a store on Broadway near Twenty-first street.

—The system of electric clocks has been discontinued in Minneapolis, Minn., after three years' trial. It has proved unprofitable, there being only 130 clocks in the system.

—The American Waltham Watch Co. print upon page 56 of this issue a highly important announcement regarding their non-magnetic watches, which every dealer should read.

—D. De Sola Mendes & Co. recently sent out a novel circular by mail in the form of a diamond paper. The announcement was contained inside, and the outer fold of the paper contains certain stock marks.

—Columbus watches are selling better than ever before. Four grades are now made expressly for railroad men, and are consequently accurately made and rated. Dealers should examine these watches.

—M. J. Paillard & Co., the music box dealers, have a very large stock for the fall trade ready for inspection. The line contains many new things in the staple styles, and the novelties are quite numerous.

—The Dennison Mfg. Co. have one of the largest and best stocks of jeweler's cases, boxes and findings, etc., to be found anywhere. They have offices in all the leading cities, where their goods can be seen and purchased.

—Crouch & Fitzgerald, the trunk makers, will shortly remove their down-town store from 1 to 14 Cortlandt street, the large store formerly occupied by the F. Kroeber Clock Co. They report their business increasing.

—The Manhattan Watch Co. will send samples of their watch to responsible dealers who have not seen it for inspection. These watches are sold direct to retailers, and each one sold is fully guaranteed by the manufacturers.

—W. C. Edge & Sons in their advertisement this month, give a partial list of the goods which they manufacture under their new process, the sterling silver, gold inlaid. Dealers will find these goods exactly what they are represented.

—The R. Wallace & Sons Mfg. Co. have their fall line ready for inspection. Besides their well-known line of goods in plated ware, which has been enlarged, they have extended their line of solid silver goods, which includes many pretty novelties.

—Mr. G. M. Thurnauer, of 66 and 68 Reade street, has recently opened some new importations of novelties in fancy goods for jewelers. This house carries a complete line of fine art pottery, bronze ware, terra cotta, etc., and their stock this season is unusually full.

—Mr. James Fricker, the well-known jeweler of Danville, Va., who recently sold out his business there to Mr. J. W. Brill, has moved to Americus, Ga., where he has large commercial interests. He will assume the office of President of the First National Bank, which was offered him months ago.

—The character of the initial goods made by Odenheimer & Zimmern are having a thorough test in the hands of a large number of purchasers. This firm report a large demand for their interchangeable goods, made in many patterns in lockets, sleeve buttons and rings. They are continually increasing the variety of patterns, and at present their line is fuller than ever.

—Carter, Sloan & Co., among their new patterns for the fall, show a great many with new styles of enameling. Enameled jewelry, it would seem, is more popular than ever, and the patterns in which it is now sold mostly, are of substantial style and the colors are very delicate. In all lines of jewelry this firm have something new, and many little novelties have appeared for the first time, some useful, some merely ornamental, but all handsome and practical.

—The Spencer Optical Mfg. Co. will shortly issue a new catalogue.

—K. M. Whiting & Co. show in this issue an illustration of a handsome berry spoon of their manufacture. They now have their entire line ready for the fall. It contains many novelties, useful and ornamental, and their line of staple ware contains many new patterns. Their New York office exhibits a full line of samples.

—The Francis engraving machine, a specimen of the work of which can be seen among our advertisements, is a useful instrument whose merits are known to the many who have used them. The reader's attention is directed to the advertisement noted.

—Mr. A. Klingenberg this season shows a larger line of art pottery than in any former season, and buyers will find many fine pieces here which cannot be duplicated elsewhere. In porcelain and glass-ware and in fancy wares he has largely added to his stock, and among his latest importations are some novelties for the fall which must be seen to be appreciated.

—The Towle Mfg. Co. illustrate a new pattern of silver plated ware, called the "Eudora." This pattern is fully up to the usual excellence of the goods of this house, both in design and finish. It is made in bright and oxidized finish, and of the peculiar quality which has been attained alone by this house. Jewelers only can obtain them of the manufacturers, who have established a rule to sell to the legitimate trade only.

—The salesrooms of the house of Leon J. Glaenzer, 80 Chambers street, are again full of novelties for the fall. This house having moved last spring into their present quarters, where they have much more space, are now able to make a more attractive appearance of their beautiful stock. Their advertisement does not begin to mention all the goods carried in their different departments, and buyers must visit the establishment in person to become aware of the rich selection of goods to be seen.

The Trenton Watch Co. are now booming their popular watch under their new plan of selling the retailer direct. Mr. J. B. Yates, the general selling agent, has opened an office at 21 and 23 Maiden Lane. Five travelers have just gone on the road to find customers among the retailers, and trade is beginning to be brisk. Two hundred hands are now at work at the factory, and finding all the work they can do. The company has begun to use gold-filled, silver and plated cases, besides the nickel cases in which the movements were first sold.

—Mr. Edwin A. Thrall reports an encouraging trade for this season of the year. He has lately received some fresh invoices of precious stones from Europe to which he invites the attention of his patrons. His importations are of the finest qualities and are very clean. Mr. Thrall shows some beautiful pieces of mounted goods which are well worth inspection. In this line it is his rule to mount goods of the highest quality in the very latest and approved designs. His windows are among the most tastily arranged in the city.

—Mr. Charles D. Pratt, of the Chas. D. Pratt Co., 33 Chambers street, importers of fine fancy goods for the jewelry trade, who recently returned from Europe, reports a very successful trip. As in former years Mr. Pratt visited particularly the unfrequented marts of Germany, Austria and Italy to get original patterns in fancy wares and he was successful in thus procuring many things seldom imported to this country. Jewelers will find in his establishment many articles which they can profitably handle.

—The Cox & Sedgwick Mfg. Co. are still the headquarters for rich jewelry in gold, onyx, etc., set with pearls, diamonds and other precious stones. Their line this season contains many novel patterns and will be greatly enlarged as trade demands. In onyx goods the demand seems to be almost entirely for the dead finish, and this finish is shown in many neat and pretty designs. In fancy pendants, necklaces and bracelets, for which a growing demand is noticed, this firm make some handsome patterns, ready made and mounted to order.

—The J. C. Wilber Jewelry Co. has been incorporated in this State with a capital of \$20,000.

—The R. Wallace & Sons' Mfg. Co. are just out with their new catalogue, which will shortly be sent to the trade.

—Levy, Dreyfus & Co. call the attention of the trade to a new line of bronze figures and fancy goods recently selected in European markets by Mr. Levy.

—The Dueber Watch Case Co. has opened an office in Boston, The new office is in the Studio Building on Tremont street, and is in charge of Mr. John W. Sherwood.

—E. G. Washburne & Co., the old established manufacturers of jewelers' signs and emblems, etc., have removed to 46 Cortlandt street, where they have largely increased space.

—The Gorham Mfg. Co., have just placed on the market another handsome pattern called the "Versailles." They say it is the handsomest ever produced. Illustrations will be found in their advertisement this month.

—Mr. Billings, of Randel, Baremore & Billings, who has been quite ill in the Oriental Hotel, Manhattan Beach, for over a month, is now recovering. He left the Oriental Hotel on August 27 for his home in New York City.

—E. H. Saxton & Co., of Boston, have removed their place of business to 58 Winter street, where they have a larger store by far than their old one. They have also increased their stock of watches, diamonds, jewelry, etc., and are now offering strong inducements to the trade.

—The New York *Sun* of July 29 contained an article on the "war" between the Jobbers' Association and the Dueber Watch Case Co. The article contains interesting interviews with Mr. J. H. Noyes and Gen. Geo. W. Mindil, the representatives of the different sides, and the article is very interesting reading.

—A fishing party composed of Mr. A. K. Sloan, of Carter, Sloan & Co., Messrs. E. E. Fitch and John Logan, of the American Waltham Watch Co., and Mr. Geo. H. Richardson, of J. W. Richardson & Co., during the month of July made a successful fishing trip to a famous stream in New Brunswick, Canada.

—A small jewelry store at 2,131 Third avenue, under the proprietorship of J. Karolyi and H. Pelatsck, was recently deserted by the proprietors, who took nearly all their valuable stock with them. They leave behind some creditors, besides their store fixtures. Detectives are looking after the missing jewelers.

—The Sterling Company have prepared a large addition of new patterns in artistic silverware, and their travelers are now calling upon their customers with full lines of samples; Mr. Parks in New York, Philadelphia, Baltimore and Washington, Mr. Rogers through New York State and the West, Mr. Schulze in the South and Mr. Loring in Boston.

—Mr. H. W. Mayer, of the "Palace Diamond Parlor," Kansas City, Mo., recently made a \$1,200 badge, which was presented to the chief of the fire department in that city. The badge was richly set with diamonds around the border, the center being finely enameled. The badge was a fine piece of work and has attracted comment in all the Kansas City papers.

—A gentleman recently wrote to us asking us to purchase and send to him one of the handkerchief holders which he saw advertised in THE CIRCULAR by S. M. & F. J. Griswold. Acknowledging its receipt, he says: "I received the handkerchief holder, for which please accept my thanks. It is very pretty and ought to sell well."

—Mr. Hipp Didisheim has removed his office in 83 Nassau street to the large front office in the same building, where he has more space and handsomer surroundings and better facilities for his increasing business. He has just received a large invoice of chate-laine watches in gold, silver and nickel, and also a large line of 6 and 18 size Swiss movements to fit American cases.

—Kallmeyer Bros., of Detroit, Mich., have sent out a beautiful little parchment booklet containing their "seventh anniversary" announcement. The little book enumerates the novelties manufactured by this concern, and their peculiar facilities for doing business since recently enlarging their space. Their travelers are now out upon the road.

—The Non-Magnetic Watch Co. are certainly advertising their product in an effective and enterprising manner, and there can be no doubt that they have attained great results therefrom. The arrival of Mr. Blaine last month made a point for non-magnetism, and it would seem that the whole country can tell of the advantages of a watch made of non-magnetizable material.

—Dealers will find of interest the American Watch Co.'s circular in regard to their non-magnetic watches, which is published in this issue. The severe tests to which the non-magnetic and time keeping qualities of these watches have been subjected clearly demonstrate the advantage of this latest and perhaps greatest of Waltham inventions. All of which gives further proof that American genius leads the world.

—The death is announced of John B. Hefner, one of the oldest retail jewelers in Chicago. Mr. Hefner was born in Bavaria in 1829, where he learned the watch making trade. He kept a rather small stock in Chicago for about thirty years. He leaves a moderate estate.

—Billings Bros., of Wichita, Kans., were robbed of goods valued at \$5,000 on the 6th of last month. One of the thieves was afterwards captured together with all the stolen goods.

—Mr. L. O. Stevens, of J. P. Stevens & Bro., Atlanta, Ga., arrived from Europe on the new steamer, the *City of New York*, on her first trip. He gives a very pleasant account of his trip to Europe, which was for business and pleasure combined. He remained in the city a few days, and before returning to Atlanta intends to spend several weeks in the wilds of Virginia recreating. Mr. Stevens says he bought some fine goods for his firm in the European markets.

—We desire to direct attention to the advertisement that appears in this issue of THE CIRCULAR, of "The New York Horological Industrial School, for the practical teaching of watch making and repairing and the kindred arts." A corporation has been duly chartered by the State for the establishment of this school, and we are assured that arrangements have been made to secure competent instructors and a suitable location for the inauguration of a national school of instruction on the lines proposed, after the manner of similar schools in Europe. Pupils will be received at any time, and receive full instruction at the rate of \$50 per quarter. The necessity for such a school has long been felt in the trade, and it is to be hoped that the promoters of this enterprise will receive such encouragement as their plans and methods warrant.

—The Elgin National Watch Co. has taken hold of the subject of a Relief Association among the employees, and pamphlets with "Elgin National Watch Co. Employees' Aid Fund" upon the front cover have been passed around by the management. It has eleven pages, and contains the seventeen rules of the employees' aid fund. Every male employee in good health who desires to accept the benefits of the fund will pay 25 cents per month, and every female 15 cents. To the amount collected each month the company agrees to add one-half, not to exceed \$5,000 per year. Every male contributor shall, by reason of sickness or accidental injury, be paid from the fund \$25 per month and every female \$15, for the time he or she is disabled, not to exceed six months. Asthma and hay fever subjects will receive no consideration. In case of a contributor's death \$50 will be paid in defraying funeral expenses. A little address to employees, signed by Supt. Hunter, says: It is proposed to organize this fund by enrolling a membership at once, so that collections can begin September 10, proximo. All members of department aid societies in good standing who so desire will be admitted to participation in this fund as charter members. The new aid association, it is expected, will organize with 1,500 members.

—The residence of Mr. B. S. Freeman in Attleboro, Mass., was recently robbed of a quantity of valuable jewelry belonging to Mrs. Freeman.

—Mr. J. F. Stratton, importer of musical instruments, music boxes, etc., arrived from Europe last month on the *Lahn* after a successful purchasing tour.

—Attention is called to the advertisement of C. H. Knights & Co., in this issue. A more enterprising and successful concern is hard to find in the west.

—The store of Thomas Yost, Fresno, Cal., was burned in a large fire which destroyed a valuable portion of the town. Mr. Yost's loss is about \$20,000, upon which there is an insurance of \$10,000.

—Mr. A. F. Cross, of Cross & Beguelin, is on a two months' vacation, which he is spending with his family at his cottage on the shores of Schroon Lake. He will return about the 1st of October.

—L. Sauter & Co. call the attention of the trade to their new styles of rings set with diamonds, rubies and other precious stones. They have prepared a fine line for the fall, which should be seen by the trade.

—Lewis & Co., of 2 East 14th street, carry a line of handsome shades for lamps and candle fixtures, which should be seen by the trade. An ornamental shade makes an attractive appearance and often sells the lamp.

—Faber's gold pens and pencils continue to be known and highly appreciated by the trade. Mr. Eberhard Faber is showing a large assortment of seasonable novelties at present which the judicious buyer will see before making his fall purchases.

—Cross & Beguelin report that in their material department and in some special lines of watches and jewelry they are having a better trade than at the same season last year. Their mail orders are coming in heavily. Attention is called to their advertisement.

—Schleicher, Schumm & Co., of Philadelphia, will have one of their famous Otto Gas Engines at the Buffalo International Fair. This engine is said to consume a much less quantity of gas than other makes, and the fact that 20,000 of them have been sold is a proof of their superiority.

—Cattelle & Decker, of 20 Maiden Lane, illustrate in this issue two of their new designs in oxidized silver. They make quite a line of popular silver novelties which are selling rapidly. The use of solid silver in ordinary household goods such as toilet articles, brushes, mirrors, etc., is increasing.

—Attention is called to the artistic advertisement of Mr. Charles F. Wood. Mr. Wood makes a specialty of incrusting, for which he has one of the best equipped factories in the country. Mr. Wood is also in the market with a good line of precious stones of all descriptions, of which his rose diamonds form a large part.

—Mr. W. R. George, of 63 Nassau street, manufacturer of Morocco, plush and velvet jewelry cases, has prepared a large assortment of new designs for his fall trade. He has designed many novelties in his line, which the trade should see, as they cannot be procured elsewhere. In staple goods he keeps a good stock on hand.

—Stern & Stern are ready for their fall trade with a large line of "Eclipse" watch cases in new and handsome designs. Since the recent removal of this house, they have increased and beautified their stock and now keep on hand a larger stock of diamonds, set and unset, watches and watch cases, besides a complete general stock of gold and plated jewelry.

—The Boyd & Abbot Co., of 23 Warren street, dealers in fancy novelties, etc., show an elegant line this season. Hitherto they have done a large business in fine stationery articles such as jewelers can profitably handle, and their growing trade with the jewelry trade has led them to lay in a large stock of fine goods particularly for this branch of their trade. Jewelers will find it profitable to inspect their stock.

—The Bradley & Hubbard Mfg. Co. have an advertisement in this issue to which we wish to direct attention. The salesroom of this company is beginning to assume its usual fall appearance, busy with customers. The new goods are artistically displayed and many small novelties are shown. The dealer will find a call at this salesroom of interest as well as profit.

—The old established house of C. Rosswog & Son have made up for the fall a large line of rich diamond jewelry of which they make a specialty. For many years they have manufactured a high class of rich jewelry, and their stock of this season will be superior in richness to any they have shown before. The line includes lacepins, brooches, earrings, rings, bracelets, etc.

—Our readers will miss the usual contribution of Mr. Chas. S. Crossman in our issue of this month, owing to the fact that he was called out of the city on business before his article was finished and was unable to complete it. He writes us that he will be all ready for the October number of THE CIRCULAR, and will continue his interesting series of articles until completed, a series that has been unbroken for over two years.

—H. F. Barrows & Co. have now ready for the fall trade a new chain which they have named the "Victoria." By the use of this chain, a watch pocket may be dispensed with by the wearer, the cross-bar of the chain keeping the watch securely in position, invisible, and easy of access. The chain and charm are also fully displayed. An illustration of the new chain appears on page 15 of this issue, and should be noticed by the reader. The chain is an improvement over the popular Queen chain.

—Herman Duhme, the well-known and popular jeweler of Cincinnati, died on Thursday, the 23d of August, in the 75th year of his age. He was absent from home at the time of his death, the particulars of which have not reached us at the time of going to press. Our correspondent at Cincinnati expected to furnish us with the details of his death and a sketch of his life, but was unable to do so in time for this issue of THE CIRCULAR. It therefore remains only for us to say that Mr. Duhme was one of the best known men in the jewelry trade, of which he had been a prominent and leading member for many years. He was a capable, intelligent, enterprising and pushing man, devoting himself to the best interests of the business, and strenuous at all times for that which he recognized to be right. Occupying an enviable social position, he took an active part in municipal affairs, and few citizens of the city of his residence were better or more favorably known than he. He was held in the highest esteem by all who knew him because of his broad and comprehensive views, as well as because of his pleasant and sociable nature. It is but a few days since a representative of THE CIRCULAR had an extended conversation with him, at which time he seemed to be in good health and in full physical vigor. His death was as unexpected as it was lamentable, and his memory will long be held in reverence by a large circle of friends and associates.

—B. Cerf & Son, watchmakers, of 42 John street, have just completed for a western house a curiously constructed clock, the idea of which is original with them. The hands are of round wire, nickel-plated, soldered together in fantastic shape, each representing a spear. The minute hand is 2 feet 6 inches long, or, 2 feet exactly from the center to the point. Each hand is propelled independently and both are constructed upon the same principle. The minute hand has a small lever watch movement concealed in a kind of box at the end opposite the point, and a curve-shaped weight is attached to the watch movement, which is made fast to the box by its center post. The weight, when down, including the movement and box, nicely balance the point of the hand; and when the weight revolves, motion is imparted to the hand. The secret of the motion lies in the weight attached to the movement. The watch movement in the minute hand being attached to the box by its center post, and the watch movement in the hour hand by its hour wheel, being wound up, are made to revolve; and the weights attached to them balance the hand in the peculiar manner to give correct time. The hands revolve on a steel spindle screwed into the center of a four-foot glass dial. The whole makes a very attractive looking but mysterious clock. It will be on exhibition at B. Cerf & Son's for several days.

—Mr. D. B. Thompson, formerly at Mecklenburg, N. Y., is now located at Trumansburg, N. Y.

—Mr. S. Van Moppes, of the house of D. L. Van Moppes, arrived from Europe Aug. 26th on the *Bretagne*.

—The heaviest casting ever made was that one of the Bethlehem, (Pa.) Iron Co., on July 2d last at its foundry at that place. It weighed a hundred and fifty tons and took three weeks to cool.

—The Goldsmiths' Company, of Canada, has been incorporated, with a capital of \$100,000. The incorporators are: H. H. Fudger, H. Smith, W. J. Barr, C. Maughan and G. A. Galloway, all of Toronto, Ontario.

—*The Trader*, of Toronto, says that a movement is on foot to get the Canadian government to allow a rebate of from 15 to 20 per cent. on uncased clock movements imported into Canada. Our contemporary heartily indorses this movement.

—The Rockford Watch Co. report that their business has steadily increased since last year. They are now increasing their force of workmen to keep pace with the demand for their popular make of watches. The demand has never been greater than it is now, and the prospects are reported as good for the coming year.

—During the recent meeting of the American Association for the Advancement of Science, Mr. George F. Kunz read three important papers, entitled respectively, "On Some Chipped Arrowheads from North Carolina," "On a Remarkable Jadeite Tablet from Santa Lucia Cotzumalguayra, Guatemala," and "On a Remarkable Gold Ornament from the United States of Columbia."

—We call our readers' attention to the "Monard" watch, a finely finished Geneva movement, which is spoken of very highly. These movements are only manufactured in one grade and fit the 16 size cases. They have obtained the highest distinction at the observatory in Geneva. J. Eugene Robert & Co., 30 Maiden Lane, are the agents for these movements and they will be pleased to give all desired information.

—Krementz & Co., are in the market with some of the handsomest patterns of the season in rich jewelry of every description. They report a large demand for their one-piece collar button which has gained a phenomenal reputation. The advantage of being made of one single piece of gold has advertised it far and wide, and the simplicity of its manufacture has made its price within the reach of all. Jewelers have not been slow to lay in a good assortment of these buttons, which are made in ten sizes.

—The Peoria Watch Co., of Peoria, Ill., will hereafter make a line of anti-magnetic movements only. Previous to making this change in their line of 18 size watches, they gave notice of the discontinuance of their former line of 15 jewels adjusted movements, and, as will be seen by an advertisement in another part of this issue, they have sold out the entire lot to the firms of Oppenheimer Bros. & Veith and Louis Herzog & Co. These firms are now offering them to the trade at astonishingly low prices, which can be learned on application to either firm. A list of the grades appears in the advertisement which should be noticed by all interested.

—Greenleaf & Crosby, Jacksonville, Fla., have closed their store and come north during the visitation of yellow fever to that city. Mr. Crosby left Jacksonville during the early stage of the epidemic and brought with him the greater part of their valuable stock. Mr. Greenleaf was away from Jacksonville at the time at his large orange grove, and afterward came north to join his family. Mr. Greenleaf says that their business is not much affected by the fever, for at this season of the year there is very little done in the jewelry business. Their clerks were anxious to leave Jacksonville at the time of the fever, and the store was closed for a time. Before long Mr. Greenleaf expects to be again at his orange grove attending to that branch of his business which is very large at this time of the year. By October he expects that Jacksonville will be itself again and that his firm will again be ready for business.

—Mr. J. W. Brill, of Norwalk, Ohio, saw in *THE CIRCULAR* the advertisement of a "chance of a lifetime," in the special notice column, and has purchased the stock and fixtures of the advertiser, James Fricker, at Danville, Va. The same advertisement was run in other journals, but *THE CIRCULAR* advertisement brought double the replies and the purchaser.

—Mr. Ferd. T. Zehner, of Detroit, Mich., was recently the victim of a swindler giving the name of William Walters, who claimed to be an old acquaintance of Mr. Zehner. The swindler visited the store of Mr. Zehner several times and at last unfolded a splendid opportunity for the latter gentleman to go into partnership with him. They were to rent a fine store in a better part of the city, and one day Walters claimed to have found just the store to suit him. He sent Mr. Zehner to look at it while he tended store. When Mr. Zehner returned he found that Walters had gone and taken a quantity of valuable stock with him. Then the character of the swindler began to dawn upon Mr. Zehner. A dispatch from Toronto, Ontario, August 13, stated that Walters had been arrested there for bringing stolen goods into Canada. His offense is not extraditable.

—Some time since we printed the details of a new isochronal clock, invented by H. Conant, of Pawtucket, accompanied by three illustrations. It has attracted much attention in the trade, and its operations have been awaited with interest. In a recent letter regarding it, Mr. Conant says that he set it running on the 2d of May, and on the 28th of June it showed a loss of $1\frac{1}{2}$ seconds by the Washington signals, but a gain of one second by Cambridge. He then moved the pendulum a single point, since which time he had not moved the regulator, nor had a hand been moved on it since the 10th of May, and yet on July 23 the Cambridge signals showed that it had gained half a second since the 28th of June. He says further: "I can't tell what it will do in time to come, but if it varies no more than during the last two months, it will not vary three seconds in a year. I cannot discover that the barometer has any effect whatever. The same may be said of temperature."

—We have been shown the new 6 size (ladies) movement of the Hampden Watch Co., the first product of their new Canton factory, and it is a credit to the makers. The tools and machinery needed in its construction were placed in position in the new factory early in the year, and work began in February with the push so characteristic of this company. As a result of their skill and energy, the new movement made its appearance simultaneously with the advent of the workmen from Springfield, and thus the new department for ladies' goods at Canton, gave joyous welcome to the other departments from the old factory, by the presentation of a new size and beautiful grade of movement. In its appearance and construction, as well as in its time-keeping qualities, this new creation of the Hampden company, fitly crowns all previous efforts of a company for the sterling character of its workmanship. We bespeak for the newcomer, a beautiful nickel movement, full jeweled in the finest ruby settings, a large sale for the fall and holiday trade.

OUR WORKING DESIGNS.

—We are glad to note the ever-increasing interest taken in our tissue supplement which is manifested on all sides, especially from our manufacturing friends "down east." These designs always show some original features, to a greater or less extent practical, and the manufacturing jeweler will often find these working designs of use to him in giving ideas. Nos. 2 and 4 this month show simple designs for sleeve buttons; numbers 5 and 6 are quite easily worked and handsome ear ornaments. The increasing use and popularity of hair ornaments is met by design number 7—a hair ornament with two short pins attached. Design number 9 is a very light and graceful lace pin in the form of a spray of flowers. The pin tongue is put on stiff and the end stem of the spray serves for a safe catch. The other designs will easily suggest their usefulness to the reader.



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No. 9.

THE JEWELERS' CIRCULAR

AND

HOROLOGICAL REVIEW.

OFFICIAL REPRESENTATIVE OF THE JEWELERS' LEAGUE, THE NEW YORK JEWELERS' BOARD OF TRADE, AND THE JEWELERS' SECURITY ALLIANCE.

It is also the Recognized Exponent of Trade Interests.

A MONTHLY JOURNAL DEVOTED TO THE INTERESTS OF WATCHMAKERS JEWELERS, SILVERSMITHS, ELECTRO-PLATE MANUFACTURERS, AND THOSE ENGAGED IN THE KINDRED BRANCHES OF ART INDUSTRY.

SUBSCRIPTION.—To all parts of the United States and Canada, \$2.00 per Annum, Postage Paid. To all Foreign Countries, \$3.00 per Annum, Prepaid.

All communications should be addressed to

SETH W. HALE, PRES'T,
THE JEWELERS' CIRCULAR PUBLISHING CO.,
189 BROADWAY, NEW YORK.

Advertising rates made known on application.



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IF THE fall trade in general holds up to the promise of the early September days, it will be all that the most sanguine can expect. The summer, on the whole, has been rather remarkable for coolness, interspersed with a few intolerably hot days, the average being in favor of weather personally comfortable. As a consequence, business men have been more faithful to business duties than usual in the summer, and more goods were sold in consequence. Several firms in the Lane inform us that their sales this year have exceeded those of each corresponding month of last year, and that the September orders have been especially good. In the last days of August, even, quite a number of buyers were in the city, and their purchases were liberal. All spoke well for the prospects for business this fall, and are preparing for a good demand. Manufacturers are fully prepared to supply new and desirable goods to any amount, and most of them have succeeded in producing some novelties for the fall trade. The outlook at this time is most promising, there being nothing in the way to threaten the general prosperity, if we except the usual excitement of a presidential campaign, and this has already been discounted.

THE OUTBREAK of yellow fever in Florida in August was most unfortunate for the business men of that State, and they are entitled to the sympathy of the whole country. At Jacksonville the cases were more numerous than elsewhere, and it became necessary for the authorities to quarantine the inhabitants and prevent them from going elsewhere for fear of spreading the disease. The government sent aid to the sufferers, establishing camps in high and healthy localities to which those could go who chose to remove from the city, and where the poor and needy were cared for without expense to them. The residents of the city felt that it was considerable of a hardship to be prevented from going where they pleased to escape the danger, and the government surgeon who established the quarantine was denounced in severe terms, but as a promiscuous scattering of refugees in all parts of the country would have been fraught with great danger to every community in which they found shelter, the course of the medical authorities was generally approved. On previous occasions this dread disease has been widely disseminated by refugees flying from the localities in which it first showed itself, and to prevent a repetition of this a little severity is necessary. Those members of the jewelry trade in Florida who have had their business interrupted, and their prospects for the year blighted by the appearance of yellow fever, have the full and hearty sympathy of the trade in the North.

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MUCH has been said of late in regard to the phonograph, invented by Edison, and the graphophone, invented by Prof. Bell, for the recording of spoken words and reproducing them at any time subsequently that might be desired. There promised to be a long and costly legal fight between the two inventors as to their individual rights to the invention, but this was settled by the formation of a company with a large capital to sell either or both appliances. These machines are now in the market and the public has an opportunity to test their commercial value. The writer of this paragraph had the pleasure of "interviewing" one of the machines recently and was astonished at the result. The graphophone is a little machine, constructed in the highest style of workmanship, standing on a table, the whole taking up about as much room as an ordinary sewing machine. A tube of stiff paper covered with some soft preparation is placed in the machine, and the interviewer talks to it through a bell-shaped tube. As the paper cylinder revolves rapidly the wave sounds caused by the voice are recorded on the wax-like surface on the tube. Then the "talker" is put on, two hard rubber receivers placed lightly in the lobes of the ears, and the machine again started. The listener then hears repeated the words that were spoken and recorded, with all the different intonations and inflexions of the speaker, but less loudly. In practice, the machine may sit on a table with a type writer, and whatever it says be immediately transferred to paper by the type writer. It is claimed that it is going to revolutionize business methods. For instance: A business man receives his mail in

the morning, and at once, as he reads his letters, talks the answers to them into the graphophone, and when he gets through, turns the paper cylinders over to his clerk or type writer, who thus has the exact words repeated to him and can write them out at his leisure. Should the use of the graphophone become general, the paper tubes may be sent by mail anywhere for letter postage, and the receiver can, by placing it in another graphophone, hear repeated the exact words of his correspondent, with his tones of voice and all the emphasis he has given to his words. The machine seems to be very simple, not liable to get out of order, and there is every reason to believe that the invention will be of great service to business men in a variety of ways. They are operated either by a treadle, like a sewing machine, or by electricity; the latter can be connected to the incandescent electric light wires and sufficient power to run it thus secured. A stock company has been formed that controls the phono-graphophone in this city and vicinity, having headquarters at 13 Park Row, where they can be seen in operation. Great are the wonders of electricity, and the hundredth part of what it will yet do for us has not been revealed. The graphophone is not, strictly speaking, an electrical instrument, but the telephone is its godfather, Edison's experiments with the telephone having led to the discovery that the sound of the human voice could be recorded and preserved for future use. He is now in full correspondence with his representatives in Europe by means of the paper tubes used in the phonograph.

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THE GREAT telescope at the Lick Observatory, in California, has now been in use about four months and, as it was predicted it would be, is proving to be of the greatest value to science. Prof. Edwin S. Holden, who is the astronomer in charge of it, has written a letter in which he states that the observations already taken have revealed many wonderful things in the heavens whose existence was previously only suspected. Every day new stars are being discovered and studied, while previously-formed ideas relative to those already known are being revised and corrected under the clearer observations that the new telescope has made possible. Some time since M. Perotin wrote to the Paris Academy of Sciences to the effect that his observations of Mars led him to believe that the continent thereon had been suddenly submerged and destroyed by the surrounding seas. Prof. Holden declares this to be a mistake, as the Lybian continent is still visible, and there are no evidences to show that it has been subjected to any disaster. He thinks a temporary obscurity misled the French astronomer. A skilled photographer is attached to the Observatory, and is daily employed taking views as shown through the telescope, and the result will be important additions to existing charts of the heavens, and many corrections thereto. It will be remembered that the lenses of this telescope were made in Boston after several failures to produce them had been made in Europe.

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REPRODUCTIONS and illustrations of ancient forms of jewelry demonstrate that there is comparatively a limited field for modern jewelers in the production of new forms of jewelry. It remains, therefore, for them to exercise their ingenuity in devising new combinations of old forms and in exhibiting superior workmanship. If one could overhaul a stock of jewelry that was made ten or fifteen years ago, he would have said that there was little chance for improvement, yet our manufacturers have gone on improving, inventing and designing till the jewelry of ten years ago is now old style and out of fashion. During the past few years, for instance, it would seem as though all the changes that could be rung on the Queen chain had been utilized, yet Carter, Sloan & Co. have brought out for the fall trade many new patterns of the Queen that are not only new but very beautiful. One that we saw consists of a gold

ball whose surface is covered entirely with a beautiful pink enamel, on which are artistically arranged diamonds and pearls. Others are enameled in part and in other tints, while the arrangement of precious stones varies with each pattern. So it is with other forms of jewelry, new methods are being constantly devised for beautifying old forms, or blending them with other combinations, and the result is a new series of novelties that are very attractive. The modern jeweler is nowhere behind his predecessors of old either in originality of design or invention, and in the point of workmanship he is by far his superior. While ancient jewelry is often beautiful in form, the workmanship is so crude that no lady of the present time could be persuaded to wear it. Shakespeare is said to have stolen most of the ideas of modern writers, and if he had not put them in shape before they were born, they might have improved somewhat on the form of expression. Modern jewelers are placed at a similar disadvantage in many respects—those old chaps had no consideration for coming generations, but appropriated all the best ideas for their own selfish uses. But they were woefully lacking in the skill with which to present those ideas in the most pleasing manner, and there is where the modern artisans have the advantage.

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A GOSSIPING correspondent of a Philadelphia paper, writing from Paris, notes the fact that there have been some curious changes of late years in the fashions for staple commodities, not excepting the matter of watches. The watch is regarded either as an ornamental trinket and not carried for use, or as an article of important use and valuable according to its trustfulness. If considered as a trinket, the latest style is to have it set in a round ball, encrusted with small diamonds, sometimes intermixed with pearls, rubies, sapphires, or other precious stones, or it forms the top of a smelling bottle, or is set in a bracelet, or in the handle of a parasol. But the watch for everyday wear and use has become a very practical article indeed. An old jeweler says that the business of replacing watch crystals was formerly an important item of revenue, but now, in place of the thin, delicate crystals formerly used, they are made thick and heavy, and will stand as much hard usage as any other part of the case. The introduction of these substantial crystals has lessened the demand for hunting case watches, and many persons prefer the open face, guarded by a heavy crystal, having a white dial with plain black figures, so that the time of day may be ascertained without all the trouble of opening the case. Fine complicated movements, however, are usually enclosed in hunting cases, as these afford better protection from all the contingencies of rough usage, dust, dampness, etc., to which the watch of the average business man is exposed. In watch chains there has been no radical change since the pretty gold vest chains usurped the functions of the old fob chain, the use of which made it almost necessary for one to take off his vest every time he wanted to consult his watch. In these days, when everything is done in a hurry, every man regulates his movements by his watch, and one that is quickly seen and that is trustworthy as a timekeeper has become as much of a necessity as hats or boots.

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SPEAKING of trustworthy timekeepers, the writer once had a mantle clock that suddenly took a freak and refused to run. Of course, the repairer said it wanted cleaning, and cleaned it was, but it only ran a week when it again grew tired of working and decided to take a holiday. Another repairer again decided that it wanted cleaning, and after he had done some tinkering it was placed in its customary position. Again it went on strike, refusing to work or be conciliated. So the writer experimented himself with it, and at last found that by turning it wrong side up it would run beautifully and keep most excellent time. But as it was reversed it was a little troublesome to tell the time by it, and this difficulty was solved

by calling in a small boy and having him stand on his head to read the time. This was satisfactory till the boy went off to school, then, as the ladies of the household refused to adopt his plan, the clock had to be replaced by one that would run while in the upright position its maker designed it to occupy.

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NEW INVENTIONS are constantly being put forth that are destined to "revolutionize" one branch of trade or another, and many have been so revolutionized. We were shown recently a common gimlet-pointed screw that was made by an entirely new process, whereby there is absolutely no loss of material, and the screws can be produced very much more rapidly and at less cost than by the present process. By the new process, a piece of metal is placed between rollers and the perfected screws come out at the other side ready for use. The metal is simply rolled into shape by machinery that is very simple and inexpensive, and there is no loss of metal. Screws of any size can be made by this process, which promises the usual revolution in the methods of making screws. As the inventor of the process is a practical man, who has made fortunes for several persons by his inventions, capitalists are seeking to obtain control of this screw patent, and screws made by it will probably be on the market before a great while. It promises to be a valuable idea for watchmakers.

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FOR THE information of numismatists, collectors of coins, coin dealers, etc., Director of the United States Mint Kimball has prepared a circular giving definitions of technical terms used in mint regulations, and other useful explanations of coinage matters. A coin is said to be "proof" when it is specially struck by hand press, instead of by steam press, from a polished planchet, and a "proof set" is a complete set of proofs of current coins. A "pattern piece" is an early specimen or proof from a newly adopted coinage die or dies. An impression in soft metal to test an experimental die is called a "trial piece." When a piece is struck from regular dies on experimental metal or alloy, or from experimental dies with experimental legends, devices or designs, it is denominated an "experimental piece." Trial and experimental pieces, struck for mint purposes only, cannot be issued, circulated or sold. Pieces popularly known as restrikes, false metal pieces, and metallic replicas, or copies, are prohibited by the Revised Statutes. Proof and pattern pieces are sold by the Superintendent of the Mint. The Superintendent will furnish, without charge, a pattern piece to any incorporated numismatic society in the United States. In such cases, if the pattern be in gold or silver, the value of the metal will be required.

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THE statement has recently been made by a practical iron worker of fifty years' experience that not only does metal rot from age, but that continual jarring has the effect to weaken its tensile strength, an illustration of a familiar kind in this line being afforded by the step of a carriage which, when new, may be bent back and forth without breaking, but after a few years' service will certainly break, no matter how well preserved. This same loss of tensile strength is noted in carriage springs. The poorest may be safely relied on for a year, but even after that short time they begin to break, and those, too, of the best quality will break after years of constant and exacting service. It has been found that old crowbars made of the best Swedish iron and used by the early settlers of New England, have become so rotten that they could not be welded when broken, and had an offensive smell when the welding-heat was applied.

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WE TRANSLATE from one of our exchanges an account of the dedication ceremonies of the statue of Daniel Jean Richard, which occurred at Locle, Switzerland, recently. The translation

will be found on another page of this issue. Mr. Richard was the recognized father of the watchmaking industry of Switzerland, and so great were his services to his fellow citizens that they took means to perpetuate his memory by the erection of a large bronze statue, consisting of a figure of a workman having in his hand an open watch. The dedication was attended by a large number of prominent persons, and thousands of interested spectators. Mr. J. Eugene Robert, of this city was present, and writes as follows to a friend:

"I have just spent two days with my family at Locle, where we were invited by Mrs. Ed. Favre-Piner for the grand inauguration and unveiling of the bronze statue of Daniel Jean Richard, the benefactor of the country, or, as my official invitation states, 'the creating genius of the watchmaking industry of the Jura.' The trains from Chaux-de-Fond alone brought over 7,000 persons, and there were besides heads of government departments from Berne, Geneva, Besancon, France and Francillon, of course, both brothers Jurgensen, and others. I enclose my invitation card, in the left hand corner of which you will find a representation of the statue itself. The procession, the ceremonies, music, speeches, illumination of the whole town, banquets, fireworks, etc., made the day memorable in the annals of Locle. The following day I attended dinner at the country residence of Jules Jurgensen, where over one hundred persons of note sat at his table. During the dinner we had some speeches, music and fireworks, followed by a reception in his drawing room."

The account of the dedication of the statue which we print will be read by all persons interested in horology, who cannot fail to feel proud of the distinguished honors that have been heaped upon one of their number by appreciative fellow townsmen.

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THE SUPERSTITIONS that in ages past have clustered about engagement and wedding rings and about precious stones are innumerable, and some of them have descended to the present day. In the fourteenth century a fanciful Italian writer on the mystic arts set forth the virtues of the various gems, indicating also the month in which it was proper to wear particular stones in order to secure the best result. The idea took, and for some time it was the fashion in several Italian cities to have the precious stone of the ring determined by the month in which the bride was born. If in January, the stone was a garnet, believed to have the power of winning the wearer friends wherever she went. If in February, her ring was set with an amethyst which not only promoted in her the quality of sincerity, but protected her from poison and from slanderous tongues. The blood-stone was for March, making her wise and enabling her with patience to bear domestic cares; the diamond for April, keeping her heart innocent and pure so long as she wore the gem. An emerald, for May, made her a happy wife; while an agate, for June, gave her health and protection from fairies and ghosts. If born in July, the stone was a ruby, which tended to keep her free from jealousy of her husband; while in August, the sardonyx made her happy in the maternal relation. In September, the sapphire was the proper stone, it preventing quarrels between the wedded pair; in October, a carbuncle was chosen, to promote her love of home. The November born bride wore a topaz, it having the gift of making her truthful and obedient to her husband; while in December the tourquoise insured her faithfulness. Among the German country folk, the last-named stone is to the present day used as a setting for the betrothal ring, and, so long as it retains its color, is believed to indicate the constancy of the wearer.

The Magnifier.

MUCH has been said and written against that indispensable optical instrument used by the watchmaker, the magnifier, and all kinds of objections have been urged against it. In spite of all these objections, however, we are so bold as to assert that, if well constructed and rationally used, the magnifier is an actual blessing not only for the watchmaker but also for those who are occupied in the manufacture of minute articles. Without it the majority of the

young men engaged in such callings would soon become short-sighted. The use of the magnifier actually is the collecting of all the rays emanating from the article to be inspected and confining them to a small space, the focus, and every vision is capable of accommodating itself to this field by simply approaching to or withdrawing the glass from the object. The accommodation of the eye, therefore, is not fatigued, because it changes according to necessity, while, if using the unaided vision, it is constantly exerted.

It is true that there is a difference in magnifiers. The image seen through the lens is blurred around the edge because the rays of light have to pass through an unequally long path, thereby causing a difference of convergence. This evil is magnified the nearer the eye, glass and object are together, or, in other words, the stronger the lens is the greater the quantity of light passing through the lens around its center. A good magnifier lens must not have less than three inches focus, a free opening of about 20 millimeters, and be about 27 millimeters from the eye. Larger lenses, more highly refractory and closer to the eye, cause a disagreeable feeling.

It is evident that if the magnifier were to be used uninterruptedly the other eye will suffer thereby, because it is condemned to inactivity. Watchmakers know well that apparently the other eye sees nothing of the image through the magnifier, but its full strength is preserved by entering into action whenever the magnifier is not used.

Electricity in Mechanical Industries.

DURING the past month there was held in this city a convention of the Electric Light Association, comprised of electricians from all sections of the country. The purpose of the gathering was the exchange of views upon the subject of electrical science, and the discussion of the numerous problems that are presenting themselves daily for the consideration of experts in the business. Mayor Hewitt welcomed the association to the city, and in the course of an interesting address he said that the science of electricity was yet in its infancy, and that we do not yet dream of the infinite number of uses to which it will be adapted in the near future. When we contemplate the numerous uses to which electricity has been adapted during the past ten years, and how willing a servant to the human race it has shown itself to be, the possibilities of the future are beyond our comprehension. Already it furnishes light, heat and power, and its further application for the benefit of mankind is limited only by the lack of mechanical ability to utilize it. This, however, will be overcome by the inventive genius of this country, and it will not be long before electricity will be as common in our houses and places of business as gas and coal now are. Already in many places in this city electric motors are being used to drive light machinery, the current being transferred from the electric light wires to a small motor connecting with the machinery that it is desired to run. The objection to the general use of electricity as a motive power, lies in the fact that the plant necessary for its generation is a costly one, as is also the process of converting into electricity the power latent in coal. While a large portion of the business houses in the city use electricity for lighting purposes, the cost of it is a little more than the cost of gas, but the brilliancy of the light more than compensates for the additional cost. But if electric lights could be supplied at a less cost than gas, as will undoubtedly soon be the case, their use would become universal and the days of gas be numbered. The same objection holds good as to using the electric current as motive power, its cost being so great that those having steam appliances prefer to use them to changing to the safer and cleaner substitute, electricity. But it will not be long before it will be possible to dispense with steam power, with its attendant coal nuisance, its dirty engine room and dictatorial engineers, and to simply bring into the workroom a current of electricity, and, by turning a

stopcock, set the machinery in motion that may be required to do the work in hand. Jewelers, printers, and those industries that are necessarily conducted in business centers, will find yet that electricity is their best friend.

A daily paper recently contained a report to the effect that a dentist had successfully used electricity instead of gas for the extraction of teeth, with the most satisfactory result, the patient having suffered no pain whatever while the tooth was being drawn. If it should be fully demonstrated that electricity can be used as an anesthetic, it will be a great blessing to the medical profession, but especially to those who are forced to become their patients. To draw teeth, cut off legs, and perform all surgical operations while the patient has been rendered insensible to pain by the use of electricity, would be an immense stride in medical science. The general application of electricity to mechanical uses seems to depend solely on the skill necessary for its utilization, and this our mechanics may be trusted to overcome. As to the cost of generating electricity, that too will also be reduced as inventors proceed with their investigations and obtain a greater familiarity with this subtle element.

Free Hand and Mechanical Drawing.

BY EXPERT.

(Continued from page 39, August, 1888.)



HREE hundred years' experience has established the fact that pictorial genius can best express itself with pigments prepared in oil, and for sketching from nature is by far the most acceptable method. The greatest objection urged against its use in making sketches, and particularly studies, was that we could only lay on one coat of color at a time and consequently another occasion must be sought for completion. All who have given landscape painting attention know how subtle and evanescent the most beautiful effects of landscape are, and must realize the importance of seizing at the instant the passing expression on nature's face. Now oil colors are by far the most rapid and convenient method, if it only

afforded the means of placing one color over another without waiting for the color already placed to dry. Mr. Hammerton, an English artist of well-known merit, both as an artist and popular writer on subjects of art interest, has invented a process remedying in a great measure this objection. It is accomplished in this way: At the time one is making a sketch he has soaking in a proper tray a piece of the thinnest and most gauzy tissue paper to be procured. As soon as the first painting is complete, the piece of tissue paper (which is the exact size of the sketch) is taken from the turpentine and spread deftly over the sketch. This is the pith of the process as given to the public by Mr. Hammerton. But like all such brief and imperfect communications, the artist, and more particularly the tyro, finds the technical details difficult and tedious to work out. The writer has mastered the technicalities, and will endeavor to convey them to the reader. He (the writer) finds the tissue paper to work best after a coat of thin mastic varnish has been applied to both sides of it. Paper to be properly prepared should be stretched on a temporary frame so as to be absolutely flat. Five or six minutes' soaking in turpentine softens the varnish so it perfectly adheres to the raw surface of the picture. The surface of the paper should be gone over with a flat sable brush to firmly press it down on the

soft surface of the sketch. If any blisters establish themselves and refuse to "down" puncture them with a pin. The tray for soaking the prepared tissue paper should be about $\frac{3}{4}$ of an inch deep and should be as large as will go into the lower compartment of the sketching box described in August number of this journal. A good sized bottle of turpentine should be carried in the pocket to fill the tray about half an inch deep. I will now give a few details of the method of sketching with oil colors and then speak again of applying the tissue paper as mentioned above. Prepared linen board for oil sketching can be bought at all art material dealers, but they are not as good as panels of poplar or pine. Thin pine boards, such as are used to back looking glasses, planed smoother and painted with two coats of ordinary white lead on both sides are much preferable, as they do not so much absorb the oil as do panels of linen board (same as book covers are made of). The object of painting the panels on both sides is to prevent their warping. The cover of the color box described in August number of this journal, where the palette is placed when the box is closed for carrying, is the place for the panel when sketching, as then one is expected to hold the color box in his lap and have the palette in his left hand. It has long been a theory with artists that if we had the three primitive colors red, blue and yellow in prismatic purity, they would be all we would need, and that practice would enable us to compound any and all tints from these three. But unfortunately science has not so far afforded us these colors in sufficient purity to be available. I mean purity of tint, not purity of material. For sketching purposes a very simple palette is desirable, consisting of only five colors, viz.: cremintz white, ivory black, yellow ochre, light red, dark cobalt blue. These colors give us an approximation of the three primitive colors only in a subdued sense. One soon learns to mix them in such a way that almost any effect can be realized, only the effects are in a low tone. We will now imagine we have a landscape to sketch of a foreground of grass and rocks, cottage and trees, with a distance of hills, water and sky. We first outline the picture carefully, then lay in the sky. The colors for the sky are white, light red, cobalt blue, and a little ivory black, painting the clouds in with pure white. Keep your tints (mixtures) as clean as possible; then paint in the distant mountains, using a mixture of light red, white and cobalt. The trees are made out with ivory black and yellow ochre. A bright green can be obtained by mixing cobalt with yellow ochre. After the picture is complete, that is, all the surface has been gone over, it will be found that the whole thing lacks strength and clearness. We now spread our prepared tissue paper over the picture, as directed above, and after a few minutes (as soon as the turpentine evaporates) we can paint over such parts as need strengthening, like giving a crispness to edges of clouds and carrying sharp defined foliage over the blue sky. Strengthen the shadows in the foliage. But it is the foreground where the covering of transparent tissue helps us the most, enabling us to give firm, strong shadows, and brilliant high lights, and if the paper is properly prepared and applied it is so transparent as to entirely disappear. After we have accustomed ourselves to painting on a low key it is very easy to increase the brilliance of the colors by employing those of higher chromatic strength. But in the hands of a skilful man most exquisite results can be obtained with these simple colors. A few words on the pencils, as artists term the small brushes used. For out-door sketching bristle pencils are the best, but the wants of the artist will suggest such modifications as he needs. As for instance if a long continuous line of color is desired, a pencil similar to those sign painters use is proper. The ruling idea with a painter should be to endeavor to express his idea of the scene before him in the most perfect manner possible with the materials and implements he has at his disposal. If a given color does not come up to his idea let him choose such as seems better adapted. Or, if the tools (pencils) he has will not convey his idea let him modify such as he has, or make, or get made, such as seems to him better adapted to ensure the desired result. All artists of any superior eminence always got up tools new and peculiar to themselves.



* A Complete History of Watch and Clock Making in America.

[By CHAS. S. CROSSMAN.]

Number Twenty-six.

Continued from page 79, July, 1888.

D. D. PALMER, WALTHAM,



IRST saw the light of the sun in North Bridgewater, Oneida Co., N. Y., in 1838. His first experience in the watch line as a boy was with a quartier that had lain all the winter in a pasture, which he came into possession of by sawing and splitting a cord of wood. He struggled hard with it. He made a hairspring from a piece of fine brass wire, and at last succeeded in making it go, after a fashion. He had gained some little experience and then went at the carpenter's trade for two years, but meeting with an

accident by which he was laid up for two years, he learned what he could of watchmaking during the time.

In 1858, at the age of twenty, he started a small jewelry store in West Winfield, Herkimer County, N. Y., but soon removed to Newport in the same county. Here he had a pocket chronometer to repair, and conceived the idea of making some pocket chronometers. He bought his balances and hairsprings of course, but did his own jewelry, obtaining Swiss jewels for the first ones. Later on he succeeded in making his own jewels, obtaining stones for the purpose of Mr. James Bottom, of New York city.

In the summer of 1864, Mr. Palmer gave up his business to take a position in the American Watch Factory at Waltham. Previous to going there he had made about twenty-five chronometers, and he continued to make them during his spare time for several years, until he had completed something like two hundred, which he mostly found market for in the southern states.

They were nearly all 18 size $\frac{3}{4}$ -plate, gilt, keywind, except a few which were nickel. The first few had fuzees, but the greater part of them he made with going barrels.

In 1870, Mr. Palmer conceived the idea of making a lever watch, but being at the time in charge of the adjusting room of the factory he could do little towards carrying out his project, except to make tools, until he left the company's employ in 1875. At this time he fitted up a small shop at his house at the junction of Crescent, Spruce and Adams streets, built a small engine room, put in a two-horse power engine, and commenced work on the tools in good earnest. Soon after, he began work on the watch movements. The first movements produced were a few 10-size, key-wind, gilt movements, but Mr. Palmer soon after commenced making material for a 16-size, $\frac{3}{4}$ -plate movement, in gilt and nickel, with a stem-wind device of his own invention. Its peculiarity is a vibrating crown wheel, and is pendant set. The stem pulls out to set the hands. He has been hard at work for a number of years, and now has a well equipped shop. He has now some fifteen hundred movements well towards completion, a few being already completed. They are made

in three grades: fine nickel, medium ditto and a medium grade of gilt, both hunting and open face, and bear the name "Palmer Watch Company, Waltham Mass."

In general appearance they resemble in many respects the 16-size Waltham movements. Another feature of Mr. Palmer's business is the giving of instructions to apprentices, especially those somewhat advanced and wishing to gain still further knowledge of practical horology. It is certainly time well employed for any young man who desires to be proficient in the trade to spend a few months or years with Mr. Palmer.

CHARLES S. MOSELEY,

Whose name has become, as it were, a household word in the American watch industry, was born in the town of Westfield, Mass., Feb. 28, 1828. When he was about nine years of age his parents removed to Illinois, traveling so far at that time being considered quite an event. The country was then very new, and Mr. Mosely relates that for some time after they settled there, it was not an unusual occurrence to have the wolves come and take a peep through their little cabin window. His first work as a boy was dropping corn on the prairie into holes made with an axe. After two years, his parents returned to Westfield, when the young man was permitted to get what was then considered a fair education at the academy. His tastes were entirely mechanical, and he was apprenticed in Hartford for six years to the machinists' trade, working on woolen machinery. But he did not like this particular branch of mechanics, and after finishing his apprenticeship and working as journeyman a short time, he went to Windsor, Vt., when rifles were then being manufactured, and after remaining there a few years, came to Boston. About this time Messrs. Dennison, Howard & Davis were getting under way and offered him a position with them as a machinist, and in 1852 he entered their employ, from which time dates his connection with the watch business. He went with them to Waltham, remaining until 1864, when he left to take the superintendence of the Elgin Watch Company. At the time of leaving Waltham he was holding the position of foreman of the machine shop of the American Watch Company. From that time until within the past few years Mr. Mosely has been continuously connected with various companies, remaining in Elgin until 1877. Afterwards at Lancaster, Fredonia and Springfield. During his residence in Elgin, he succeeded in starting the lathe business in connection with his brother, Horace Moseley, who now carries on the business, and manufactures the Moseley lathe, of which we shall have occasion to speak in another connection.

Mr. Moseley has been suffering for a number of years with a throat affection which has made it necessary for him to reside in Florida during a part of that time. He purchased a small orange grove there, and expects to make that his future home for himself and family.

JAMES M. BOTTOM

Was born in Connecticut and came to New York city in 1842, and formed a partnership with Mr. A. B. Van Cott, who carried on the jewelry business in Grand street. He was one of the finest and quickest workmen ever known to the trade. Later he moved to Nassau street, and while there invented and patented in 1850 what was known as the "Bottom's Lathe," using foot power instead of the old-fashioned bow. This was quite an innovation for that day as previous to that all work had been done on a bow lathe. He had them made for him and sold them quite extensively. He also made the escapement of watches a special study. He claimed that no watch could be made to run correctly with a soft hairspring, and to him must be largely credited the introduction of what is now long been known as "tempered hairsprings." He went to making them as a business and was the first and for sometime the only maker of tempered hairsprings in this country. His process he kept a strict secret, not even allowing his apprentices to learn the art. Mr. Wm. Wales, at that time an apprentice of his, relates that at one time being taken seriously ill,

and fearing he would not recover put all the tools he used for that purpose into a rubber bag with some bricks and sunk it in the North river. Mr. Wales learned something of his process, however, and says at first he wound the hairspring wire in the box with a piece of light, soft mainspring to make the distance between the coils. He could only temper one at a time in this way, but afterward adopted the plan of tempering three at a time as is now done. He experimented with oil and quicksilver to temper in but found oil gave the most satisfactory results. His hairsprings made him famous. He made them for some of the American companies and for the watch material trade.

Of his personal characteristics it may be said of him, he was eccentric in many things and a man of a very positive nature. He never married. He died in 1879, after a somewhat lingering illness.



[FROM OUR SPECIAL CORRESPONDENT.]

PARIS, Sept. 12, 1888.

Traveling agents have gone on their long tour, doing all they can to fill up their book of orders for the coming season. It must be acknowledged that Court diplomacy is but a child's sport if we compare it to the skill and (honestly meant) artfulness which must be displayed every day by even a second-rate commercial traveler. Provincial retailers are not easily conquered nowadays—at least those who intend to pay in due time for what they order. Besides, they are so much besieged, they have become *blasé* about praises lavished on the very best this and the most original that. They have turned so thoroughly sceptical that, merely to bring them to give a look at his goods, a traveler must very often use the whole of his wits. Politeness is evidently the first requisite; but, in this case, it is not so much an intelligently managed courtesousness, the tone of which has to be altered according to the disposition, the education, and even the temperament of the person being addressed, which is needful. The object in view is to thoroughly interest the coveted customer. To take gradual possession of his mind, so as to lead him to believe that you perfectly know what kind of goods he wants, and are, at the same time, decided to offer him no articles but those he is likely to sell. The traveling agent who is anxious to get permanent customers ought not merely pretend to understand what they require, but really try and do it, urging them to purchase no goods but those which are almost sure to attract the buyers.

A diamond setter, Mr. Brockhuysen, has come to consider precious stones in general as a kind of beads only suitable for trimming; and it is evident that jewelers, according to his idea, have no business to handle them unless they mean to encroach on milliners' or dressmakers' private ground. He has, in consequence, mounted diamonds in independent bezels, which allows them to be sewn on any material whatever in a way to form (so he says) a great variety of designs. We do not intend to undervalue Mr. Brockhuysen's invention, yet we must confess that we cannot see how the jewelers are to be injured by it. Gems fastened side by side, or strung together like so many beads, will never make an elegant pattern, according to our modern idea of beauty in jewelry. Let the poetical turn of imaginative milliners, or the wonderfully supple genius of artist-dressmakers, be applied to that object, they never will be able to assemble those separate stones in a way which might represent an insect, a bird, a flower, or any ornament of a refined style.

We are pleased to hear that a school for lapidaries will soon be opened in Paris. The teaching is to be divided in four parts: cleaving, roughing down, setting, and cutting or facetting. The third

part does not seem, at first, to be thoroughly indispensable, yet it is evident that no one can cut a precious stone so as to make the most of it in view of the effect, if he does not know how to mount it. Three years are thought to be quite enough to make perfect hands. Pupils who should prove utterly indifferent would be sent back to their family after a sufficient trial.

Mr. Grosgeat has invented an artificial jewel which he calls the Polychrome. He has juxtaposed within one setting several imitation stones of various colors, and he lays on them a large strass of a hue different from theirs, through which they all sparkle. We should like to see fairy queens, at the Theatre du Chatelet, wear it in the shape of brooches, necklaces and diadems, and move about the stage, with appropriate costumes, under a light the best calculated to kindle this new jewel. Then we should be able to form an exact opinion about it.

The clocks we see in show windows offer a great deal of variety in shape and design. Bronze, marble, worked iron, and even porcelain, or rather imitation of it, being enameled brass, stand side by side in a gathering in which dissimilarity has been well managed to attract the attention. They are all placed so as to set each other off, none of them being thrown into shade by a neighboring one. A man of taste, as any dealer in such articles ought to be, finds out the proper distance and height at which those clocks have to stand, according to their comparative size, and arrange them so as to avoid that any note should chime out of tune in the symphony of colors.

We notice some picturesque figures in bronze, most of them being reproductions of modern familiar scenes: a fisherman, a wrestler, a *porteuse de pain*, a street songster; each of them in a well-known appropriate attitude. The boy with the top is a very striking piece. That little fellow, unkempt, bare-headed and bare-footed, has his clothes creased up through the excitement of play. His right hand, dropping naturally on his side, listlessly holds a long string. On the upturned palm of his left one is a top evidently spinning. Our little boy's ear seems almost to stretch towards it, so intently he listens to its humming, as plainly show his wistful look, and his parted lips faintly whispering: "hush."

Mr. Henri Havard's *Dictionnaire de l'Ancublement*, recently published, represents quite a work of a Benedictine, applied to old curiosities, ancient bibelots and superannuated utensils. It is the result of fifteen years' labor, and the author says, in his preface, that he had to consult about five thousand volumes, sixty thousand *dossiers*, and one hundred and twenty thousand accounts. We gather from Mr. Havard's work the following details, which our want of space obliges us to give in a condensed form:

Spoons were in use long before the thirteenth century. They are mentioned in all the royal inventories from 1300 to 1400. They were generally in silver, sometimes gilt, very often chased, and also inlaid with pearls, rubies, coral and mother-of-pearl. When proved to be genuine, those rare pieces have, during the last years, fetched a very high price. A pretty folding spoon of Henry II.'s time reached, in 1884, at the Fau's sale, 21,400 frs. The handles hardly measuring eight centimètres up to the year 1590, it was found necessary at that time to give them a good length, as a result of the fashion of wearing enormous ruffs.

The table fork was unknown until the end of the sixteenth century, and the use of it appeared so thoroughly ridiculous, at first, that a very sarcastic pamphlet was published about it.

Knives were invented at the very dawn of civilization. We need only mention the cause of an alteration they had to undergo about two hundred and fifty years ago. The Cardinal de Richelieu, having one day the pleasure of treating to dinner the Chancellor Séguier, felt exceedingly indignant in noticing him use his knife (sharpened, as they were in those times) as though it had been a toothpick. The illustrious prelate, anxious to prevent the recurrence of so shocking a behavior, gave to his steward the order to have all the blades of his table knives rounded at the top. The example was followed by every one, and the new custom soon became generally established.

Mr. Bonnemère has taken the trouble to enumerate all the fetiches and amulets which a fancy superstition, so to speak, has introduced among the Parisian jewelry. It is an interesting review of all the fashionable luck bearers, from the bracelet *porte-Confiance* to the charm *philippine*; but I believe that most of them are well known in America. The *grigri* in amber is still worn with a bracelet. The antediluvial resin is supposed to contain flies, which, in primitive times, happened to be englued in its matter before it became hard. But most of those fetiches sold as genuine are not. The art of imprisoning tiny insects in amber seems to have been known for many years. A letter addressed to the *Académie des Sciences*, in 1770, relates that an artisan had found the means of softening amber, of giving it all kinds of colors and of introducing into the half melted mineral small flies or bits of anything, causing a contrivance of art to be mistaken for one of nature's sports.

In answer to the inquiry heading the "Communications" of your August issue, we could only be able to tell in what year has been made the watch belonging to your correspondent, if we happened to find Julien LeRoy's business books, which seems almost impossible. Another way to obtain the desired information would be to try and discover a timepiece of his, marked 2948 or 2950, given on a special occasion, which might be mentioned either in history or preserved records. The watchmakers of the same name now established in Paris cannot claim him as their ancestor; and we have even no details about the last years of his well-known son Pierre, who had become his successor in 1759. If we had a very accurate description of the works and ornaments of the watch in question, we might be able to trace its date out pretty close, in comparing it with some rare pieces of Mr. Paul Garnier's collection, or of Mr. Ollivier's. In the absence of any particulars, we may only come, at present, to the following conclusion:

Julien LeRoy was a *maitre-horologer* from 1713 until his death, which occurred in 1759. Watches were made in those times by rather slow proceeds. Therefore, we suppose that the one marked No. 2949 may have come to life towards 1740, in the best period of Louis XV.'s reign.

JASEUR.

Practical Hints on Optics for Skilled Opticians.

[EDITED BY C. A. BUCKLIN, A. M., M. D., NEW YORK.]



WE WILL now continue the consideration of Carter's article on asthenopia.

In the great majority of cases of ametropia, and especially in hyperopia and astigmatism, some pain will form part of the complaint made by the patient. Generally speaking the pain will be relieved by the correction of the obvious defect, and no more trouble will be experienced. Such cases are primarily classified as ametropia, and their asthenopia is obviously a mere complication or result. There are others, however, in which asthenopia is present in great severity, and in which either the cause is not obvious, or the relief of some obvious defect fails to cure the asthenopia. These cases may be looked upon as typical examples of asthenopia, and their treatment requires much care and circumspection. It can only be conducted upon the basis of a complete knowledge of the state of every single element in the performance of the visual function; and this knowledge can only be attained by a thorough, systematic and orderly examination.

An orderly and systematic method of proceeding is also a means of saving much time, and it has the additional advantage of insuring that no part of the examination shall be forgotten or neglected. My own course of proceeding is as follows:

First, to ascertain for each eye, singly, the apparent refraction, the acuity of vision, the manifest degree of any ametropia which may be

discovered, the presence or absence of evident astigmatism and the distance of the near-point for the smallest type the patient can read near at hand.

Secondly, to find whether there is bi-nocular vision, and if so to discover the distance of the bi-nocular near-point.

Thirdly, to observe the character of the ocular movements; whether they are regular and steady or jerky and uncertain.

Fourthly, to ascertain what are the strongest prisms which can be overcome, first by abduction with their bases inwards, and next by adduction with their bases outwards, while the eyes are directed to a word printed in small type, and placed at the bi-nocular near-point. The evidence of overcoming the prism is furnished by the maintenance of single vision.

Fifthly, to ascertain what is the nearest point to which the visual axes can be directed, accommodation being by convex lenses.

Sixthly, to test the powers of abduction and of adduction once more, the eyes being directed at an object, preferably a steady candle flame, placed at a distance of from eight to twenty feet.

Seventhly, to prescribe a solution of sulphate of atropia, four grains to the ounce of distilled water, a drop of which is to be applied to one or both eyes at bed-time, and twice with an interval of two hours on the following morning. Two hours after the last application the refraction should again be very carefully examined with especial reference to small degrees of either ordinary ametropia or of astigmatism.

By following this routine and noting the result as we proceed, we obtain a precise account of the state of the refraction, the accommodation, and the convergence, and we ascertain whether the normal relations of these functions are disturbed.

In a general way the first part of the examination up to the use of the atropia, may be easily accomplished at a single interview; but it is better to see the patient a second time than run any risk of being misled by careless answers when the eyes are tired. Whether the atropia should be applied to one or both eyes should generally depend on the engagements of the patient. As a rule, I prefer to apply it to both at once, but where there is any business which requires attention, it is best to let the first eye recover before the other eye is taken in hand. The results can be most conveniently recorded by filling up blank spaces in a printed form.

When all the facts bearing on the question have been investigated and set down in order, they will at once suggest the most probable reply to the inquiry, whether the asthenopia must be attributed primarily to strain of accommodation, or to strain of convergence. Strain of accommodation may be produced by any of the following conditions:

- 1.—Deficient power of the ciliary muscle, either as a matter of formation, or as a result of enfeebling illness.
- 2.—Impaired elasticity of the lens, as in presbyopia.
- 3.—Excessive demand, as in hyperopia.
- 4.—Constant variation of demand, as in astigmatism.
- 5.—Unequal demand on the two eyes as in anisometropia.

The cases which belong to the first three classes have the common characteristic that the need for the exercise of accommodation is greater than the power of exercising it, and they differ chiefly in respect of the side from which the inequality arises. In some, as in presbyopia, the difficulty is on the side of the lens; in others, as in weakness, it is on the side of the muscle; in others, as high degrees of hyperopia, the demand is in excess of the normal activity of the function. In all these varieties we may lay down the general rule, namely, that if the demand for accommodation, whether it be normal or abnormal, is in excess of half the power of the function in the particular case, the demand will not be continuously satisfied without pain and distress, and hence that the strain of the accommodation in

all such cases may be accepted as a probable explanation of the asthenopia and should be relieved by spectacles as a first step of treatment. If the spectacles prescribed for this purpose are not successful, they will at least clear the ground for further investigation. It is obvious that some persons will be able to exert habitually something more than half their accommodation while others will only be able to exert habitually something less than half, but in this as in all analogous cases no rule can be laid down that will be more than an approximation to the truth or which will not require modification in practice in order to adapt it to individual necessities. Still, if the working distance of the patient does not require the exercise of half or nearly half his accommodation, and if neither of the conditions mentioned under the last two headings is present, the first hypothesis about the asthenopia would be to seek its cause in some undue strain of convergence.

The author next gives typical illustrations where the demands upon the accommodation are more than half its power.

- 1—Being paresis of accommodation in a young emmetropic individual.
- 2—Presbyopic individual.
- 3—Hyperopic individual.

The illustrations are too lengthy and too tedious to publish, and are simply a review of the ideas already expressed.

The writer ignores the most troublesome of all muscular defects as the cause of asthenopia, namely, vertical muscular defects. Insufficiencies of the external recti muscles are also ignored. The cases are not infrequent, although the writer has not seen them. They cause principally asthenopia during the act of looking at a distance. They may, however, also disturb the relations naturally existing between fixation and accommodation in such a way as to cause asthenopia at the working distance.

This subject will be further considered under the special part of the article devoted to muscles.

In cases of astigmatism, although there is great strain of the accommodation, the degree of the strain can no longer be measured by the total range of this faculty. In astigmatism the strain arises from the constant variation of the demand which has to provide in quick succession and with unchanged convergence for clear vision of those boundaries of figures which correspond with the chief meridians of corneal curvature. Supposing these meridians to be vertical or horizontal the patient in every act of seeing accommodates first for the vertical and then for the horizontal boundaries of the object, or vice versa. The effect is even greater than that which would be necessary if the object, a printed page for example, were moved quickly to and fro before the eyes, because in such movement the convergence would be altered together with the accommodation. The effect of the varying accommodation will depend in some degree on the amount of variation, that is, upon the grade of the astigmatism, but in even very low grades it is often beyond the powers of the normal function.

When different forms of astigmatism are compared, my experience is that the hyperopic form occasions more trouble than the myopic, the compound more than the simple, and the mixed forms most of all; but the difference between the susceptibilities of different persons is too great to allow any general rule of this kind to be laid down. Donders originally expressed the opinion that astigmatism, less than one dioptric, was scarcely disturbing to vision, but such a degree is certainly highly disturbing in some cases; and in every instance of obscure asthenopia any discoverable astigmatism, however small, should be corrected, more especially if it should be of the mixed variety. The correction of half a dioptric has frequently been followed by excellent results.

We will consider in our next asthenopia arising from anisometropia or differences in the eyes, and also muscular asthenopia.

The class in optics will commence Oct. 16th, at 2 o'clock. It has thus far been demonstrated that one hundred and thirteen men have been sufficiently qualified as opticians to make a good living, and the period of time required to learn did not exceed two weeks in any instance.

† Precious Stones in Canada.

BY GEORGE F. KUNZ.



ALTHOUGH no mining for precious stones is carried on in Canada, and it can scarcely be called a gem-producing country, yet it furnishes a number of stones that are of more than passing interest to the mineralogist, and of some value in jewelry and the arts. A number of gem minerals, not of gem quality, are found here in examples of such stupendous size and wonderful perfection that they have found prominent places in the cabinets of the world, and are even more prized as such than cut stones from other localities. Their min-

eralogical value gives them no small commercial importance. For instance, the magnificent zircon crystals, occurring as individuals up to 15 lbs. in weight, many fine ones weighing nearly a pound, and the beautiful twin crystals of the same mineral; the black titanite in simple and twinned crystals up to 70 lbs. each; the vast quantities of amethyst from Lake Superior, the ouvarovite or green chrome garnet from Orford, and the white garnet crystals from near Wakefield, are some of the most notable of Canadian occurrences. Not the least wonderful are the apatite crystals, one weighing over 500 lbs., which are found of such size and beauty that the rich green variety, especially, would do to work into ornaments similar to those made from fluorite, which it exceeds in hardness.

What Canada has produced in precious and ornamental stones was well shown at the Centennial Exhibition, Philadelphia, 1876, and at the Colonial and Indian Exhibition, at London, in 1886. The finer minerals have found their way into the well-arranged collection of the Geological Survey of Canada, at Ottawa, the British Museum, the Mineralogical collection of McGill College, which contains the cabinet of the late John G. Miller, and the Provincial Museum of Nova Scotia. Many of the finest specimens, in full series, grace the cabinets of Mr. Clarence S. Bement, at Philadelphia, King's College, Windsor, N. S., School of Mines, New York, which contains the collection of the late Dr. Henry How, Walter G. Ferrier, Montreal, Colonel W. J. Wilcox (deposited at the United States National Museum), Amherst College, at Amherst, Mass., Prof. O. C. Marsh, New Haven, Conn., and the New York State Museum, at Albany, N. Y.

The field in Canada is so vast that although much has been done in the way of prospecting of late years, only a small part of the territory has been thoroughly gone over. With the great resources developed by the opening of the Canadian Pacific Railway many new localities will doubtless be brought to light in the next ten years, and important additions made to the foregoing list.

DIAMONDS—have not been found at any locality in British North America.

SAPPHIRE.—Corundum, in red and blue crystals, has been found in the limestone near Burgess, also in grains disseminated through a rock made up of felspar, quartz, calcite and titanite, in contact with the crystalline limestone. These grains are of a light rose-red to sapphire blue color, and are of no gem value, nor in quantity sufficient for commercial use. Chrysoberyl, alexandrite or chrysoberyl cat's eye has not been observed in Canada. Chrysoberyl has been found in Maine, however.

SPINEL.—In the seigniory of Daillebout small translucent octahedrons of blue spinel are found in a bed of micaceous limestone, and

from Wakefield* come pink and dark blueish spinels in rounded cubic crystals and opaque light blue cubes nearly an inch in diameter.

Very interesting black spinels in brilliant crystals, one to two inches in diameter, occur in Burgess and Bathurst* townships, Ont., where a vein of them has been traced for a mile in one direction. They are also associated with fluorite in the township of Ross, Ont. None of these possess any gem value, however.

TOPAZ (?).—At the London Exposition, 1862, Mr. McDonald exhibited two topazes (?) from Cape Breton, one in the rough, and the other which had been cut at Pictou, half an inch in length and of a yellow color, the variety of this mineral peculiar to Brazil, which leads to the inference that these stones may have been citrine or artificially decolorized smoky quartz, and not the true mineralogical topaz.

EMERALD.—Emeralds have not been observed in Canada. Although very fine aquamarines have been found in Maine, adjacent to the province of Quebec. Little if any beryl of value for gems has been discovered in Canada. Pale green, well defined crystals have been reported by Dr. Bigsby at Rainy Lake, 230 miles west of Lake Superior. And in Berthier* and Saguenay* Cos., Que., some crystals over an inch in diameter have been found.

ZIRCON.—The zircons of Ontario, especially those from Lake Clear* and Sebastopol* and Brudenell* townships, in Renfrew County, are the most remarkable known for beauty, size, perfection and richness of color. An occasional crystal top or a small fragment will afford a gem of the hyacinth variety, but they rarely exceed a karat in weight. Some of these individual crystals weigh about 15 lbs., and are more than four inches in diameter. One was observed three inches in diameter and nearly a foot in length. On the land of E. J. Gallagher, 25 miles west of Eganville, Ont., in Brudenell township* fine crystals are obtained. The twin zircons from Lake Clear are especially beautiful and interesting, one of them measuring nearly four inches in length, and many thousand dollars' worth have been sold as specimens. Short's Claim* on the north shore of Lake Clear, yields the finest twin zircons. Perhaps the finest twin crystals ever found and one of the best single crystals are in the British Museum Collection, while perhaps the finest series of this mineral is in the collection of Mr. Clarence S. Bement, of Philadelphia. An enormous single crystal is in the cabinet of the Academy of Natural Sciences at Philadelphia. In Burgess and adjoining townships occur some fine crystals, not so large as those from Renfrew, it is true, but of exquisite polish and highly modified forms; in Templeton* and near Grenville, Que.,* especially four miles north, are found smaller crystals, often cherry-red and transparent, that would make small gems. Highly modified crystals associated with wollastonite and graphite are also found at this place.

Zircon is now mined by the ton in the United States and about \$150 per ton is paid for it, because of the earth it contains (zirconia) which is used in the hoods for the new incandescent gas burners. The zircons are obtained by washing out the soil resulting from the decomposition of felspathic rocks.

TOURMALINE.—Tourmaline in green crystals is found in Chatham township,* Que., and the green and red (rubellite) varieties in Villeneuve township,* Que. Brown tourmalines are frequently met with in the Laurentian limestone. Fine crystals, rich yellowish or translucent brown in color, often occur imbedded in a flesh-red limestone at Calumet Falls, Que.,* and also in the townships of Ross, Ont.,* Clarendon and Hunterstown, Que. These furnish an occasional gem. Slender crystals in white quartz occur at Fitzroy, Island Portage and Lac des Chats, and of inferior color at McGregor's Quarry, in Lachute,* Ont. Black tourmaline of no gem value is found at a number of localities, principally at Yeo's Island, near

† From the Report of the Department of Mining Statistics, published by the Geological Survey of Canada.

* Specimens from the localities marked with an asterisk are in the Geological Survey Museum, Ottawa.

the upper end of Tar Island, one of the Thousand Islands. It occurs in large crystals at Murray Bay, Cap Tourmente, Que., and in white quartz on the 18th lot, 4th range of Bathurst,* Ont.; in the granitic veins in the township of Ross,* Ont.; on Roche Fendue channel, on Camping Place Bay, on Charleston Lake in Lansdowne, Ont., on the west side of the North River at St. Jerome, Que.; in Blythfield, on the Madawaska, and at N. Elmsley, and Lachute,* Ont., St. Felix and Calumet Falls,* Que. The velvet black, fibrous tourmaline found at Madoc* and Elzevir gives a blue powder and is evidently an indicolite, like the variety from Paris, Maine.

PHENACITE.—Phenacite has not yet been observed in Canada, but was recently identified by the writer at Stow, Maine.

GARNETS.—Almandite garnets occur plentifully in magnificent crystals in mica schist along the Stickeen River* in British Columbia. Owing to their perfect form and polish the faces of these crystals are the most beautiful in the world. Although they are not transparent enough to be of value to cut into gems, they are in sufficient quantity to be used for watch jewels.

Beds of nearly pure red garnet rock, from five to twenty-five feet thick, are sometimes met with in the gneiss at St. Jerome, Que., and in quartzite in Rawdon and Marmora townships, Ont., and at Baie St. Paul,* Que. Some small pieces would afford gems of little value, but the stone is of considerable use in the arts as a grinding material and for sand paper. The large red garnet, disseminated through a white oligoclase gneiss, at Lake Simon, would not afford gems but if polished with the rock would afford an ornamental stone.

Andradite garnet is found on Texada Island, B. C.,* in fair crystals, not of gem value, however.

Essonite, cinnamon-colored garnet, the so-called hyacinth of the jewelers, is found in small crystals in Grenville, Que., but not of gem value, and in fine crystals, associated with idocrase, in Wakefield,* Que. But few of these would furnish even small gems.

Grossularite, white lime-alumina garnet, is found in Wakefield* and in Hull in considerable quantity, in veins lining the crystalline limestone, and associated with essonite, idocrase and pyroxene. This is the most remarkable locality for this mineral, superb crystals two inches across having been found there, as well as groups of crystals a foot across. In color the crystals vary from colorless to light yellow and light brown, and some of them are transparent enough to afford colorless gems of from one to two karats in weight.

Melanite, black garnet, is found in Marmora,* Ont., but this variety has no use in jewelry.

Ouvarovite, or green chrome garnet, found in Orford,* is one of the most beautiful known occurrences of this rare mineral. The crystals, which are transparent dodecahedrons, rarely over one-eighth of an inch in diameter, and of the deepest emerald green color, are found lining druses in cavities of crystalline limestone, often on the chrome pyroxene and associated with millerite. If it were not for the small size of the crystals, this would be a gem of the highest rank. A few crystals of this mineral have been found in Wakefield, some of which rival in size any that have been discovered, the largest measuring nearly one-half inch in diameter. They are of a fine green, but opaque, and are sometimes filled with a yellow center.

IOLITE has not been observed at any Canadian locality.

QUARTZ.—Rock crystal is found in many localities of Canada, especially in veins with amethyst in the Lake Superior region, but it has not been observed of sufficient size to afford crystal balls or other art objects.

The small doubly terminated crystals found in the limestone of the Levis and Hudson River formation, and familiarly called "Quebec diamonds," are sold as souvenirs to tourists, as the Lake George diamonds are in the United States.

Fine Crystals are found in the soil of Lacolle, Que., and in the

cavities of the calciferous formation in many places in beautiful limpid crystals.

Larger crystals have been found with smoky quartz near Paradise Bay, N. S. (see Smoky Quartz), also in the geodes on agate throughout the entire Bay of Fundy district, and on the Musquash River, N. B., at Cape Blomidon, N. S., etc.

Milky quartz is found all through Canada, but it is never of any value in the arts except for porcelain. Rose quartz is also found at many localities, especially at Shelburne, N. S. It is of little value in the arts, but has been made into various ornaments and charms. Smoky quartz in fine groups occurs in the same veins with amethyst on both Lake Superior and the Bay of Fundy, so uneven in color, however, as to afford gems of little value. It has been found in immense crystals in the vicinity of Paradise River, also near Bridgetown and Lawrencetown, Annapolis County, N. S., from a light yellow color to the dark, smoky "cairn-gorm." Dr. How mentions a crystal 13 inches high and 6 inches in diameter. Single crystals weighing 100 lbs. each have often been obtained from the decomposing granite and have been piled up with the stones from the fields, near Paradise River, and loose in the soil. It occurs in crystals about two inches in length at Mill Village, Lunenburg, Co., N. S., and at Margaret's Bay, Halifax Co., N. S. In King's College cabinet there is a specimen of the dark, almost black variety known as "Morian," with crystals one-half inch across. When transparent, smoky quartz has considerable sale for jewelry under the name of cairngorm, Scotch or smoked topaz; when partly decolorized to a yellow and yellowish brown, as Spanish or Saxon topaz.

Amethyst is found in some form in nearly every vein cutting the cherty and argillaceous slates around Thunder Bay,* on the north shore of Lake Superior. At Amethyst Harbor* this mineral constitutes almost the entire vein, and numerous openings have been made to obtain it for tourists who visit the spot. Thousands of dollars' worth are annually sold here, and as much more is sent to Niagara Falls, Pike's Peak, Hot Springs and other tourists' resorts, as well as to the mineral dealers. Surfaces several feet across are often covered with crystals from $\frac{1}{4}$ inch to 5 inches long, rich in color, and having a high polish. Sometimes, especially when large, the crystals have a coating of a rusty brown color, owing to the oxidation of the included goethite. This is one of the most famous occurrences of this mineral, regarded as mineral specimens, but the purple color is very unevenly distributed, resembling the Siberian not the Brazilian in this respect, and as the crystals are not transparent like those from Siberia, they afford very few gem stones of value.

In Nova Scotia, however, fine amethysts occur in bands, veins and geodes at Partridge Island, Cumberland County, N. S., surfaces a foot square being covered with splendid purple crystals an inch across. Dr. Gesner mentions a geode that would hold about two gallons, found at Cape Sharp, nearly opposite Blomidon, N. S. Another, lining walls of chalcedony with concentric bandings, was found at Sandy Cove, Digby County, N. S., and weighed 40 lbs. De Monts is said to have taken crystals from Partridge Islands to Henry IV. of France, whom they greatly pleased, and a crystal from Blomidon was among the French Crown Jewels twenty years ago. A bushel of crystals were obtained by the late Dr. Webster, of Kentville, N. S., in digging a single well. Dr. Gesner also states that he had seen a band of amethyst some feet in length and perhaps two inches thick, about a mile east of Hall's Harbor, N. S. Other localities are the south side of Nichols Mountain, Cape D'Or, Mink Cove, Scot's Bay, in Nova Scotia, and Little Dipper Harbor and Nerapis in New Brunswick, and other localities along the Bay of Fundy.

The beautiful masses of straight, concentric and irregular banded amethyst (banded with quartz and agates) (see above) found in Nova Scotia on the Bay of Fundy, are somewhat similar to a variety

*Specimens from the localities marked with an asterisk are in the Geological Survey Museum, Ottawa.

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found abroad, and used for ornamental purposes, principally for clock cases and jewel caskets. The material is slit into plates so thin that they are often strengthened by cementing them on plates of glass, and the colors are enhanced by setting the plates so that the light can pass through. Dr. How mentions prase, green quartz, as occurring at Kail's Point, N. S. A beautiful hyaline quartz is found at Scot's Bay, N. S.

Sagenite (Flesche D'Amour, or Venus' hair stone) is reported by Dr. How from Scot's Bay, N. S. It is transparent quartz penetrated with needles of rutile.

(To be Continued.)

Diamond Thieving.

DIAMONDS, as most people will be aware, are sorted out of the diamondiferous stuff by native "hands." Some of these hands are probably in the pay of the fraternity, or to be more accurate, are humble members of it. A fine stone is turned up by one of them when nobody is looking. He seizes it, hides it in his hair, in his mouth or in some other portion of his person. Or if a goat lie handy, he twists it in his wool and tends the animal affectionately till an opportunity occurs of redeeming the stone. Or perchance he conceals it behind a rock, or forces it down the throat of a dog, or Homeric device, he swallows it himself. The gem being restored to the light of day from its hiding-place, whatever it may have been—and many a diamond now sparkling on a lady's neck has made acquaintance with the stomach of a Kafir—the dusky thief in due course puts himself in communication with another native of a superior class. This man is a tout in the pay of a low white man; a "Mean White," as he is called in the Colonies. The tout buys the stone for, let us say, a hundredth part of its value, and the thief spends the money on the vile drink which it is the peculiar pride of civilization to supply to the unsophisticated savage, and, so far as he is concerned, there is an end of the transaction. Then the tout carries the stone to the Mean White and receives from him a sum of money, perhaps double what he has given to the actual thief. The Mean White in his turn takes it to the licensed buyer of diamonds, who is possibly a person of glaring and even aggressive respectability—a church warden or member of the municipality, or, at the least, a merchant of good antecedents—and from him receives, perhaps, a tenth part of the worth of the gem. So far so good; but still there are slips between the cup and the lip, and it is sometimes found difficult to convey the stuff out of the country to the final receiver in London. To this end many artifices are resorted to. We have heard of innocent-looking fowling-pieces, which, on examination, have been found to be loaded with diamonds to within an inch of the muzzle, while such repositories as novels with holes cut in the leaves, the quills of ostrich feathers and boots with hollow heels are not uncommon. Often the fair sex are found to be useful auxiliaries in these adventures, for there is a peculiar sacredness about a lady's underclothing that appeals to the mind of the customs officers. The man would be bold who merely ventured on her back hair. However this may be, by far the greater number of stones so procured arrive safely in Europe. Most people will naturally think that the native rascal who takes the stone is responsible for this state of things, but such is not the case. The native, as is well known, and as Dr. Matthew's is careful to explain, never dreamed of stealing diamonds until he was taught to thief by the white receiver of stolen goods, and after his simple virtue had been debauched by "Cape smoke." More especially is this true of natives of the Zulu race, among whom, when they are as yet uncontaminated by civilization, honesty is not only a policy, but a universal practice.

Dr. Matthews tells some interesting tales of the I. D. B. (Illicit Diamond Buyers) fraternity. In the dead of a certain night in the year 1872 he was roused from sleep and confronted by a trembling and middle-aged citizen of the fields, who informed him that he had swallowed a thirty karat diamond and two sovereigns—just to show

his friends how the scoundrels did it, and was now anxious to be rid of these foreign substances, which had presumably begun to disagree. Ultimately they were recovered, and the happy citizen departed with the diamond, leaving the gold in payment. Of course, this man had disposed of the diamond under imminent fear of detection; but why he took the two sovereigns, not knowing we cannot say—unless it was to get his hand in. Some people, by the way, appear to be able to swallow very large stones, for so lately as last year, a native dying under suspicious circumstances, his body was opened and a sixty karat stone found in his stomach. Here is another tale: A white gentleman lived with a pretty Fingo woman, who also acted as his agent in the "trade." He fell ill of fever and for weeks lay in a state of delirium, between life and death. She nursed him tenderly through it all, and, what is more, kept up his connection with the "boys," so that, when he came to himself, she was enabled to present him with hundreds of karats of fine stones. And now mark the sequel! No sooner was he strong enough than he departed to Europe, taking every gem and farthing that she had collected with him, and leaving the unfortunate girl to starve on the streets. On a certain occasion Dr. Matthews was called in to attend a dying digger who had once worked a claim for him. These were the words that greeted him when he told the man there was no hope: "I shan't, I can't, I won't die without telling you how, when I worked your and Mr. Lynch's claim in No. 6, I robbed you of nearly all your diamonds."

In the face of stories such as these and of a mass of other evidence, it is sometimes difficult not to believe that civilization is a failure, and that the educated Christian man, except under very exceptional circumstances, and when restrained by the strictest pressure of law, is a lower animal at heart than the savage he despises and destroys with drink and rifle bullets.—*Saturday Review*.



[FROM OUR SPECIAL CORRESPONDENT.]

PHILADELPHIA, September 19, 1888.

Rainy weather and politics prevail, and business suffers accordingly. Jewelers in common with other people in the marts of trade feel the effect of the depressing influences. The weather has been and is vile. Cool, bracing and pleasant hours have been followed by wet, sultry and unpleasant days. Brief periods of promise have given way to long duration of meteorological misery, and of course the business interests, including those of the jewelry folks, have shared in the dullness consequent upon the unfavorable climatic conditions.

Then there is the presidential excitement, with tariff reform, free trade and protection struggling for supremacy, torchlight processions, political oratory and banner raisings all over the city, it is no wonder that the mind of the purchasing public is distracted, and that men are investing their spare cash in bets on their favorite candidates rather than in diamonds and glittering gewgaws. Among the jobbing and wholesale jewelers, however, the dullness of the retail trade has apparently but little if any effect. They are preparing for their campaign of the winter with as much ardor as the most enthusiastic politician is putting into his exertions for Harrison and Morton, or Cleveland and Thurman, as the case may be.

The average Philadelphia jeweler is not handicapped by adverse circumstances—at least he does not so consider himself. Take Simons, Bros. & Co. for instance. They are going right ahead with their preparations for invading the south and southwest, the yellow fever and all its attendant horrors to the contrary notwithstanding.

Hollinshead Bros. tackles New Jersey, a doubtful state in politics, but not at all uncertain in its attitude toward this plucky firm that wrests the dollars from the coppers of its jewelry dealers. D. F. Conover & Co., report the most encouraging prospects with all salesmen out and busy sending in orders. Atkinson Bros. turn out more Keystone watches than ever, and the National Watch Case Company which Booz & Humbert are engineering on Arch street, have increased their working force and made ready for an expected bustle in the market. The new firm, with an old head, of Hurlburt & Sons, has created a sensation on Market street, and their beautiful show windows promise to make that thoroughfare a popular promenade, while Hagstoz goes ahead with confidence in the pleasing signs of the times.

There is no denying the fact that times are dull now, but there is an equal positiveness about the feeling for the near future. That is one of the reasons why W. H. Sheaffer & Co. did not hesitate to make their contemplated change during the dull season; they knew that they could not do it with justice to themselves had they attempted it in the brisk period that is bound to ensue. This enterprising and thoroughly well established firm has moved its headquarters from the *German Democrat* building in Chestnut street, above Sixth, to handsome and commodious palatial warerooms at 108 South Eighth street, where the same high grade goods will be obtainable as of yore. In the slangue of the day there are "no flies" on this house.

The Muhr factory at Broad and Race streets, will soon be sold out for the purpose of effecting a settlement of the estate of Joseph Muhr, whose insanity demands the change in the business of this prosperous house. It will not be affected in the slightest though so far as its trade and its relations with customers are concerned.

The Gautschis, the music box men of Chestnut street, are getting up a new line of novelties in their branch of artistic industry, for the Christmas holidays. They are always ahead and never wait for the future, but do a thriving business, north, south, east and west, in the ever living present.

At the State Fair which closed last Saturday, the optical trade was well represented by the Zineman Bros.' exhibit, which, it might be well to mention, carried off the first premium. But that is nothing surprising when it is considered that the genial "Mike" Zineman gave all his personal attention during the continuance of the show to the firm's display.

Mayer, and the Philadelphia Optical Company's manager, Mr. Williams, are pushing their respective businesses for all they are worth, and they say they can furnish eye-glasses and spectacles that will enable their wearers to see the outcome of the great local struggle against Gratz, or the result of the "personal liberty" movement. Down at the extreme southern section of the city manager Bishop still runs, in his serene and confident way, the affairs of the National Optical Company, and Mr. Fitzgerald fails to see, even with the aid of the most powerful lenses in the factory, any reason why he should not congratulate himself upon his investment.

J. E. Caldwell & Co.'s alterations in their Chestnut street store have made that establishment handsomer than ever, and, in fact, put further improvement out of the question.

Joseph C. Gigon, a popular jeweler of the north-eastern section, has a fine, new store on Frankford avenue.

The trade generally sympathizes with Thomas Liggins, an old and well-known jeweler of North Second street, in his loss of \$2,000 worth of gold, silver and gems at the recent fire at the Point Pleasant Hotel, where he and his wife were enjoying a summer sojourn.

No more Saturday half-holiday, and good-bye to early-closing until next summer. The boys have all started in for hard work and long hours.

Emil Hertz, who was formerly chief salesman with Bedichimer, has taken a position with Muhrs.

The city was visited by a large number of traveling jewelry men from other parts of the country last week.

D. F. Conover says the new bracelet watch for riders and drivers is a dandy.

Jeweler Hutchins of South Eighth street is out a number of costly articles through the operations of a thief who walked off with them on Saturday, the 8th inst. He pretended to be selling masks for displaying eye-glasses, and walked off with the ornaments while Mr. Hutchins was off his guard. The police are on the lookout for him.

PENN.

On the Balance Spring.

[FROM THE FRENCH, BY M. PHILLIPS.]



IN SUBMITTING my memoir on the balance springs of chronometers and watches to the *Société d'Encouragement pour l'Industrie Nationale*, I have considered it advisable to present at the same time a condensed review of the principal moments contained in my work on the balance spring, with the following explanations:

We know that in the portable instruments serving for the measurement of time, the balance spring, together with the balance, perform the functions of regulator similar to those of the pendulum in clocks. In practice, two kinds of springs—the flat and the cylindrical—are employed. The former kind (fig. 1), which is usually employed in watches, consists of a plane spiral curve formed of a certain number of coils, generally from eight to twelve, approaching as nearly as possible a circular form, and lying around the axis of the balance. As far as regards the cylindrical spring (fig. 2), which is more especially used in chronometers, it is distinguished by the fact that its coils in horizontal projection assume the form of a circle concentric to the axis of the balance, generally terminating in two gently-bent curves, which approach to the center at a distance generally equal to the radius. The shape of this spring is that of a screw with extremely close pitch, whence its name, "cylindrical spring."

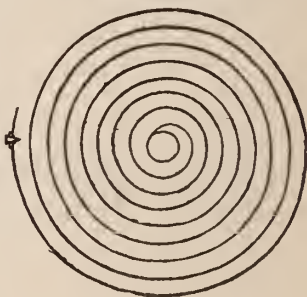


FIG. 1.

Notwithstanding a diversity of opinions concerning the origin of the balance spring, it appears to be at present satisfactorily proven that we owe this important discovery to Huyghens, while Pierre Leroy was the first who discovered the possibility of the isochronism of the balance spring. While the theory of the pendulum has been established since the time of Galileo and Huyghens, it has not been for the balance spring, as the conflex form defies all the known formulæ of the laws of elasticity. Special studies have enabled me to fill this gap.

The principle which has served me as starting point is that of the neutral axis, and I would remark here at the same time, that I have demonstrated by the conditions of the problem, that it moves strictly within the theory governing elasticity, as it has principally been established by the works of Navier, Poisson, Cauchy, Lamé and Clapeyron. I will also add that I have tested all the theoretical deductions under the most varied conditions, and that they have always accorded as perfectly as might be desired.

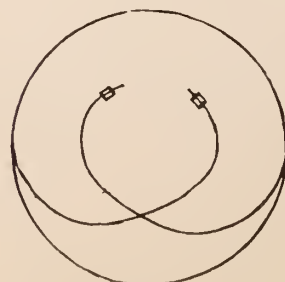


FIG. 2.

The first law which I arrived at is that which indicates the duration of the vibration of a balance united with a given spring; it is expressed by the following formula:

$$T = 2\pi \sqrt{\frac{AL}{M}}$$

in which T is the duration of a simple vibration of the balance, taking the second as unit, L is the length of the spring; M the

moment of its elasticity; T the ratio of the circumference to the diameter, and A the moment of inertia of the balance. This formula indicates the isochronism of the vibrations, since it does not depend on the amplitude of the arcs.

As we see, the formula possesses a great similarity with that of the pendulum; for instance, the duration of the vibrations of the balance spring (all things otherwise remaining equal) is in proportion to the square root of its length; entirely so as with the pendulum the oscillations are performed in a length of time which stands in proportion to the square root of its length. This concurrence is the more remarkable as there is not the least resemblance in the two cases—neither in the bodies in motion nor the force producing this motion.

The preceding formula therefore indicates in what manner the duration of the vibrations changes, when the balance or the cross-section of the spring changes. It also permits the ready calculation of the length of the simple pendulum which is to perform its oscillations in the same time as a given balance and spring.

I have also investigated the problem of isochronism. The calculation demonstrates that two fundamental conditions must be complied with thereby:

1. That the center of gravity of the whole spring must rest upon the balance axis, and remain here during the whole duration of the vibration.
2. That the balance spring must, during its motion, exert no side pressure against the balance pivots.

I have especially examined the cylindrical spring, and found that the latter condition, viz., the annihilation of the side pressure against the balance pivots, very easily produces also the first condition, as the balance spring during its action opens and closes concentrically to the balance axis. Now, we may comply with this condition by certain forms of the terminal curves of the spring, the law of which I have ascertained. It is worthy of notice that the same curves fulfil at the same time the first condition mentioned above, and which consists in the center of gravity of the spring being wholly and remaining always on the axis of the balance. There are a number of different types of terminal curves, presenting an infinity of different forms, which satisfy at once all the conditions specified. The law of the construction of these curves is very simple, and stands in relation with the position of its center of gravity. It consists in that (fig. 3):

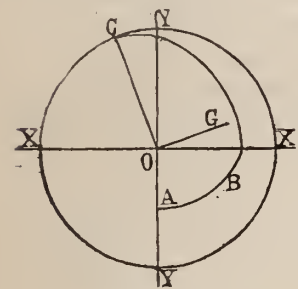


FIG. 3.

1. The center of gravity G must be found upon the perpendicular OC , which stands at right angles to the radius OC . This radius OC passes from the center O to the point C , where the curve unites with the balance spring.

2. The distance OG from the center of the curve to the center of the balance spring must be equal to a third proportional of the developed length of the curve, and of the radius of the spring, that is to say, that

$$OG = \frac{OC}{\frac{2}{ABC}}$$

I have specified in my work a simple method for graphically determining, in all possible cases, the forms of these terminal curves in such a manner that they satisfy the foregoing conditions; I have also added a number of examples which I obtained in this manner. Among this lot we will notice some which more or less resemble those found in actual practice, while others again present novel fea-

tures, such as curves ending at the center of the coils, and others, on the contrary, terminating at a point in the circumference of these last. For instance, we see the curve fig. 4 composed of two quarters of a circle joined by a straight line; each of these quarter-circles has a radius equal to one-half the radius of the spring. Another type, fig. 5, is formed of a demi-ellipse, the great axis of which is equal to the diameter of the balance spring, while its small axis is 0.58° of the radius.

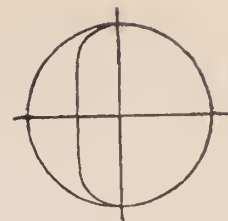


FIG. 4.

The shape of the terminal curves is entirely independent of the cross section of the plane, and also of the total length of the spring, so that, whatever the angle following that should be projected upon a plane perpendicular to the axis may be, the radii which join the beginnings of the terminal curves of a like spring, would always possess the same properties.

Again, these curves compensate certain disturbances injurious to the isochronism and its preservation. In this manner, the absence of all pressure against the axis of the balance realizes the free spring; that means since the axis suffers no pressure, it is as free as possible

from every deviation produced by friction, as well as the consequences of the thickening of the oil. Beside this, since the balance also opens and closes concentrically to the axis, instead of being thrown from side to side in its development, as is often the case, the disturbances caused by the inertia of the spring are entirely avoided.

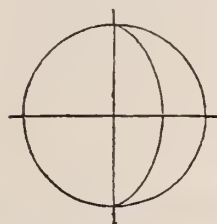


FIG. 5.

All these properties inherent in those curves are in activity, whatever be the angular distance separating the terminal curves of a given spring in its construction. We possess in this angle, or what amounts to the same thing, in the total length of the spring, an element by means of which we may obtain the last limits of practical isochronism, disregarding secondary influences which it is impossible to take into account in the calculations, such as oils, escapements, etc. Beside this, this element is precisely that by which we, according to the rule of Pierre Leroy, generally obtain isochronism as well as it is possible. This does not say, however, that there are no other means for producing isochronism, but our calculation make the preceding formula entirely trustworthy. With regard to the ordinary balance spring which is generally employed in watches, by treating the question according to the same method, we arrive at the conclusion, agreeing with experience, that isochronism can be produced only by small vibrations of the balance. The best result with the flat balance spring is obtained with the so-called Brequet spring, the extreme end of which is bent up and directed toward its center, which admits of a more concentric development of the spring around the balance axis, and gives better results. For this curve, one of the previously mentioned theoretical curves would be appropriate.

Beside the points mentioned in my memoir, I also treated several other questions, which, although not as important, are nevertheless worthy of attention. Thus, for instance, it was very interesting to ascertain the ratio in which the contraction and dilation of the balance spring occurs during its change of form. The simple formula

which express this is $i = \frac{e}{2} \frac{a}{L}$, in which i is the ratio of the con-

traction or dilation, e the thickness of the coil, L the entire length, and a the angle in which the balance is deflected from its position of equilibrium or rest; it is measured according to a circle, the radius of which forms the unit. We learn from this that the effort which measures the work of the coil is (all things otherwise being equal)

proportional to its thickness and to the angle of rotation of the balance, and, consequently, inversely proportional to the length of the spring.

Everyone knows the influence exerted by changes of temperature upon the rate of a chronometer or watch, and also knows that the irregularity produced thereby is corrected by the use of the compensated balance. In order to obtain reliable results, I have especially considered the means and indicated those which are to be employed, so that the spring which is originally in a free condition, will remain so even during a change of temperature, and, further, that notwithstanding the dilation or contraction, it will retain its theoretical terminal curves given in its construction. In short, I have examined the question of friction of the balance, and shown, conformably to received ideas, that it is well to make the amplitude of the balance vibrations as large as possible.

I have also thought it proper to show in my work, by a number of quotations taken from authors who have occupied themselves with these questions most, that the greater part of the principles at which I arrived through theory, are all in perfect harmony with the generally accepted maxims to which one is led little by little through practice. These are the conditions concerning the balance spring lying concentrically around the axis; the centering of the spring and its freedom, that is, the suppression of the lateral pressure, and the friction of the balance pivots resulting from it. At this occasion, I must also mention Ferdinand Berthoud, Jürgensen, Ch. Frodsham, etc., who are regarded as authorities in the art of horology. My memoir ends with a detailed description of all the practical investigations which I have instituted. They bear especially upon two principal points:—

1. The formula which indicates the duration of the vibrations of a balance spring and a given balance.

2. The properties of the theoretical terminal curves.

The formula on the duration of the vibration has been tested in a two-fold manner. First, I have applied it to a certain number of watches and chronometers on hand; here are several examples:

DURATION OF VIBRATION.	
By Theory.	By Observation.
Watch (flat spring) by Lépine.....	0".20151
Chronometer, by Winnerl.....	0".2486
Large cylindrical spring, Paul Garnier	1".244
	1".247

I have also instituted incidental tests with that law, which is similar to that of the pendulum (all other things being equal). The duration of the vibration stands in proportion to the square root of the length of the spring. The following are the results of these single observations:

Watches by Lépine.

Flat balance spring of 0.1524 m. length.

I shortened the balance spring by 0.032, which reduced it to 0.1204 and remounted it. By comparing the rate in the two cases, I obtained:

In comparing the time.....0.8913

In comparing the square of the length....0.8889

After having cut off still another piece of 0.309 from the spring, I obtained:

In comparing the time.....=0.7746

In comparing the square of the length...=0.7663

LARGE SPRINGS OF PAUL GARNIER.

These were two large cylindrical springs of the same steel but of different lengths, mounted on equal balances. Their lengths were 1.6855 and 1.3816 m. By counting the vibrations of the two balances during a like period, I obtained:

In comparison with the time.....=0.904

In comparison of the square of the length.=0.905

Mr. Rozé, a member of the society of horologers, also constructed two springs to repeat this experiment; they were made of the same spring wire, mounted upon equal balances; they were 1 m. and 0.810 m. long. We obtained with them:

In comparing the time.....=0.8988

In comparing the square of the length...=0.9000

Mr. Rozé has since modified these experiments in the following manner. He made three springs and fastened them upon three equal balances. Their lengths were respectively, 0.9958 m., 0.80617 m. and 0.666 m.

The first balance made in 182 seconds 180 vibrations, the second 200, and the third 220.

By comparing the first spring with the second, we obtain:

In comparing the time.....=0.9000

In comparing the square of the length...=0.8998

By comparing the second with the third, we obtain:

In comparing the time.....=1.1000

In comparing the square of the length...=1.1002

We may, therefore, regard this law as quite exact.

I pass over to the experiments relating to the theoretical terminal curves, which confirm this fact completely. Beside these I verified at first the influence of these curves upon the change of form of the spring, and demonstrated by numerous instruments, specially constructed for this purpose, that the spring provided with such curves invariably moves perfectly cylindrical and concentric to the axis, while in cases in which the curves do not comply with the theoretical conditions, the contrary is the case. I have added to my memoir a large number of sketches, by which the fact is rendered clear in the most perfect manner. Beside this, anyone can institute the experiments with the instruments still on hand.

I have also made a series of observations for the purpose of proving the following points. If the tension in a spring, that is, the tangential force which is necessary to retain it out of its position of equilibrium or inertia in a certain angle, were always in the same proportion to this angle, then, according to the fundamental principles of mechanics, one would be in the most favorable conditions for obtaining isochronism. This view is also entertained universally in practice, and has served as initial point in the experiments of many, for instance, F. Berthoud, Hauriet in Locle, Ch. Frodsham, and others. I also have proceeded in this manner and have proved with the aid of instruments based on this principle that the law of proportion, mentioned by me, is always complied with best by those springs which are provided with theoretical curves. In short, I have demonstrated the most important fact, that in a theoretical spring the annulation of the lateral pressure of the balance upon its pivots is proportional to the friction resulting therefrom. The apparatus constructed for this purpose by Mr. Rozé is very simple, and consists of a spring with theoretical curves, mounted on a balance, the axis of which is supported below upon a foot, while the upper end moves entirely free. In consequence of this arrangement, the least effort brought to bear laterally during the play of the spring, would be transported upon the balance, which would produce the effect that a partly oscillating and partly vertical motion would be imparted to the axis, so that the balance would suffer corresponding perturbations in its rotary motion. Now, in the action of the instrument, the axis remained perfectly vertical and the balance horizontal; this accords with theory in annulling the pressure of the spring against the balance. The contrary took place by the use of a spring with non-theoretical curves; the axis of the balance gives a very pronounced rocking motion.

In short I deemed it proper to add the above examples of curves, which in practice have given very good results, and which are similar to certain types to which I was conducted by theory.

Antiquity of Cameo Cutting.



GLASS MAKING dates back to the ancient Egyptians, as is conclusively shown, from the fact that glass makers at work are represented on the tombs of Beni-Hasson, 2000 B. C., and the engraved head of Queen Ybatason, wife of Thontines III., 1500 B. C., now in the British Museum, further corroborates, and also shows that the art was by no means in its infancy at those periods. Articles of glass discovered in Egyptian mummy cases show that they well understood the composition, the coloring with metallic oxides, the making and the engraving of it. That through friendly and warlike intercourse glass making

was learned from them by the Phœnicians, Sidonians, Assyrians, and later by the Romans, who carried the manufacture to a very high state of perfection, is clear and well borne out by many existing examples. Those transcendent masters of art, the Greeks, although acquainted with the Egyptians at a very early date (first Græco-Theban war, 1225 B. C., Græco-Egyptian war, 460-465 B. C.) and so well qualified to beautify it, do not seem to have taken up glass making—at least few, if any, specimens of glass have been discovered among their ruins. Certainly, they may have been robbed of their glass, as they were of their statuary and other works of art, by the raids made upon them by the Romans and others from time to time, but we have found no mention by contemporary writers of their having made any glass.

The origin of the Etruscans is somewhat uncertain. They are said by some to have been an early Greek colony, with an innate love of art and true artistic skill derived from their origin; and this theory is substantiated in some measure by the similarity of forms employed, and by their pottery and art works being decorated with subjects taken from incidents in the real and fabulous Grecian history. The Etruscans, like the Greeks, did not make glass themselves, but through conquest by the Romans, who were superior in arms (and defeated them 506 B. C.) but who were much inferior to them in all matters of art. They found in the Roman glass a suitable medium for conveying their ideas of beauty; so that with art derived from the Greeks and applied to glass by the Etruscans, and with a glass manufacture derived from the Egyptians and perfected by the Romans, were produced those grand specimens of which, perhaps, the celebrated Portland vase is the finest yet discovered.

The early meaning of the word cameo was simply an onyx (having different layers of stone), but the later designation of a cameo is an anaglyph on a precious stone—an anaglyph is when the figure is raised in relief, an intaglio when the figure is hollowed out.

The engraving of stones, gems, etc., is a very ancient practice. We read in Exodus XXVIII., 9th verse, that Moses (in 1491 B. C.) was commanded to "take two onyx stones and grave on them the names of the children of Israel," and in the same chapter, 11th verse, "with the work of an engraver in stone, like the engravings of a signet, shalt thou engrave the two stones with the names of the children of Israel;" also that Jezebel sealed the order for Naboth's death with the king's seal (1st Kings XXI., 8, date, 899 B. C.) The art is said to have originated with the Egyptians, who cut the hardest stones, as their "scarabei" testify, and passed at a very early period more or less indirectly to the Greeks and Etruscans, by whom it was carried to a state of perfection. We find that Theodorus of Samos engraved the ring of Polycrates, 522 B. C., and that Prygoteles engraved seal rings for and produced a gem portrait of Alexander

the Great, 340 B. C.; also that Tryphon engraved the celebrated cameo in the collection of the Duke of Marlborough, representing "the marriage of Cupid and Psyche," about 300 B. C. This latter date seems to have been the flourishing period of the glyptic art.

Prygoteles worked in relief, and from his time the art may have risen gradually to that degree of perfection of which we possess such rich specimens; the engraving previous to his time was most probably intaglio.

As the case of the coins of the period, which point to the excellence of the engraver's art in the producing of molds, they were often signed with the worthy artist's name. Thus the names of Discorides, Appolonides, Evænetus of Syracuse, Cimon, etc., remind us of the most perfect works. The artist made use of the lathe, the maxium, the diamond point and diamond powder. It is not surprising that the Venetians, who revived glass making about the thirteenth century, even in their most flourishing time, did not imitate the cameo, for they lacked the manipulative skill of decoration.

Ancient glass that has happily come down to our time reveals the ravages made upon it by time, producing that voodscence and decayed appearance due to a great extent to a want of chemical knowledge in proportioning the material of which it is composed. Now that these difficulties in the manufacture have been overcome, by which it has been made to assume a more definite chemical compound, its durability has been much prolonged, and it has been enabled to withstand the action of solvents and even the corrosive action of acids.



[FROM OUR SPECIAL CORRESPONDENT.]

BOSTON, September 15, 1888.

The cold weather of September has brought almost everyone back from the mountains and the country, and the retail stores are profiting in consequence. But it cannot be said that this increase in the amount of business in August is anything more than can be expected every September. However, there is no cause to complain.

There doesn't seem to be much in the way of news. At Whitney Bros.' I found them with a counter full of new stock, and was told that there would not be any news until after Harrison was elected. They are not alone in their political views, as every jeweler whose opinions I have found out is a republican.

I don't want to get THE CIRCULAR into any trouble through a libel suit, so I won't mention any names. But some developments, interesting or otherwise, are expected about one of the jobbing firms that has been accused of underhanded work in the past, on more than one occasion. It is said that the man who is, nominally, at the head of the concern, has had pressing reasons for taking a vacation, although it is getting rather late in the season for vacations. Another firm is said to act as the Co., thus playing Mr. Hyde to the Dr. Jekyll of their ordinary business, and to be now settling up (?) that of their quondam partner.

On the 11th of September work was resumed in the watch factory of the E. Howard Watch and Clock Company. A story was added to the building, and it was found, as soon as work began on this, that there was too much dust to allow any fine work to be done in the factory. On this account the factory was closed for three weeks. The new room is not yet occupied, as workmen for this additional space have not been hired. But in a few weeks it is expected that all these arrangements will be made.

Mr. Floyd, of Floyd, Pratt & Rounds, showed me a very hand-

some assortment of watch dials when I called there the other day. Several of the designs originated with this firm, which takes all that are made of them. One of the handsomest was for a ladies' watch, of dull white with raised gold figures, not letters. The figures were of the shape seen in the books of our grandfathers, and were matched by old-fashioned hands. There were many other fancy designs, but none quite as pretty as this, in my opinion.

The solid table ware that Palmer, Batchelder & Co. have been getting during the month is unusually attractive. I was just a day too late to see it all on the counters before it was placed in the cases, but enough was shown me to give an idea of what it all must be.

I met Nat. Ripley as he was coming out of the Stock Exchange one day last week. It was the first time I had seen him since he returned from his two months' trip to Europe. He says: "You Americans don't know what jewelry is."

LEON.

Travelers and Travelers.



OUR PARIS correspondent, in his letter in this issue of THE CIRCULAR, makes reference to some of the difficulties the traveling men in France have to encounter, and also refers to the qualifications it is necessary for traveling men to possess in order to be successful. While there is nothing mentioned by him that is not familiar to the "men on the road" in this country, the latter will, no doubt, derive consolation from the knowledge that they are not alone in their misery. Among the difficulties mentioned by our correspondent as meeting the traveler, is the indifference displayed by the local dealers regarding what they have to offer. This indifference, there as here, is due

largely to the fact of excessive competition, which is responsible for more travelers than the retail trade requires. The consequence is that the dealers, called upon so frequently, become weary of looking at samples, and are prone frequently to treat the salesman with scant courtesy. This in turn induces the salesman to become even more persistent than usual in urging an examination of his good; his success as a salesman and his advancement in the good graces of the house he represents are dependent upon the amount of his sales. Then, too, he is endowed with that spirit of obstinacy that is inherent in the human family, which impels him to increase his efforts in the ratio of the opposition he meets. He counts it as an additional feather in his cap, another scalp to hang at his belt, when he succeeds in selling a bill of goods to a dealer who, at the outset, was inclined to snub him. He departs with satisfactory chuckles bubbling all over him, and will relate his success, in all its details, to his fellow travelers, and the members of his firm will pat him on the back and predict well for his future, especially if he has succeeded in working off some *passé* goods.

There are too many travelers on the road. Their multiplicity serves to confuse the retail trade, and it also prevents any one of them doing the amount of business he fairly expects to do. Every manufacturer and jobber is represented in every section of the country, some of them keeping constantly on the road from six to a dozen traveling salesmen. Then every manufacturer of some trifling specialty has his travelers out, while dealers in watch movements and cases send numerous missionaries among the jobbers. Every day, and frequently several times a day, jobbers and retailers are called

away from their daily duties to examine the samples exhibited by the large army of travelers on the road. It is scarcely to be wondered at if they occasionally get short and cranky as to their temper, and temporarily forget their habitual suavity of manner and show signs of annoyance. But they have another grievance for which the travelers alone are responsible, and that lies in the fact that too many of these loquacious salesmen devote more time to disparaging the goods of their competitors than they do to vaunting the merits of their own. A traveler for Smith disparages the goods made by Brown, is confident Brown is swindling his customers in the quality of his goods; that it is reported that Brown is in a bad way, and his failure would not be surprising. The salesman for Brown follows, and not only disparages Smith, but Jones and Robinson also. This underhanded way of trying to sell goods is offensive to most persons. Business men, as a rule, are not gossips, nor do they care to listen to all the idle rumors that are set afloat by interested or prejudiced persons. The traveler who resorts to this practice of universal deprecation of his competitors is adopting the surest course possible to undermine himself and injure his employers. He leads his customers to believe that the house he represents is jealous of every other person in their line of business, and resorts to illegitimate and pettifogging methods to injure them. The salesman who stands up squarely and manfully for his employers and their goods, permitting these to stand upon their own merits, and does not seek to pull down established reputations in his efforts to build up one for himself, will command the respect and confidence of business men in general. It is the sly, backbiting men on the road who do the mischief and bring discredit upon the honorable profession of commercial travelling.

Travelers have become a necessity to the commercial methods of the present day; the house that would attempt to do without them would soon find itself on the road to decay and destruction. It is as honorable to represent a respectable house on the road as it is to represent it at the home office, and those commercial travelers who do their work in a dignified, business-like and self-respecting manner are held in high esteem, not only by their employers but by their customers. Many of this class form connections that are exceedingly valuable, and hold their customers year after year in the face of all competition. Such men are a credit to the trade and to themselves; they are counted among our successful business men. But, unfortunately, there has latterly crept into the business a number of "cheap and nasty" fellows who have no idea of the dignity or responsibility pertaining to commercial travelers, whose sole idea is to sell goods—any kind of goods to anybody on any terms. They respect neither themselves, their employers nor their customers, are offensive in their manners and their persons, and would be in their natural element if employed buying rags for junk shops. In referring to this class we have always in mind two whom we encountered some time ago in a railroad train one evening. They had evidently been "working the town" as a "day stand;" had put up at no hotel, and had evidently not had a "square meal" in a long time. They came noisily into the car and deposited their sample cases on one seat while they occupied another. Scarcely were they seated when they unrolled a package and began eating their principal meal of the day. It consisted chiefly of bread, onions and cheese, which they washed down with frequent drinks from a black bottle. They were shabbily dressed and uncleanly in every respect, the perfume arising from their persons and their delicate repast filling the car to an extent that caused several persons to seek seats in another car. Add to these repulsive features their profane conversation and the picture is not a pleasant one to recall. When travelers of this kind are frequent visitors to respectable dealers it is not surprising that the latter feel that traveling salesmen are too numerous, or too previous. There seems to be no remedy for this. So long as cheap houses will employ cheap salesmen, so long these offensive travelers will be found. The only thing to be done is for the dealers themselves to discriminate by turning the cold shoulder upon every traveler who makes himself obnoxious to them. Aid the respectable and trust-

worthy travelers to weed out their ranks and get rid of the scum that serves only to bring the profession into disrepute. Encourage those who are gentlemen by instinct and education, who represent responsible houses and who are trustworthy, but snub unmercifully those houses that insult you by sending out disreputable persons to represent them on the road. Commercial traveling is a business peculiar to itself, honorable and necessary, but, like any other, is open to all comers; but its self-respecting members should not be classified with the offscourings of the slums that may adopt it, any more than all bank presidents should be condemned because a few have been found to be unworthy.

Sainted Goldsmiths.



THE RECORDS of modern times show that goldsmiths and horologists frequently achieve the highest honors that their fellow citizens can bestow upon one of their number. In all ages the workers in gold and silver and the makers of timepieces have been held in high esteem, and in the earlier days they received many honors at the hands of their governments, and also from the Catholic Church, of which most of them were devout members. Several of them, because of their good works in behalf of the church and their great piety, were canonized as Saints. According to the traditions of the trade, St. Peter

himself is regarded as the patron Saint of horologists and goldsmiths, because, as one old writer affirms, the crowing of the cock, when Peter denied his Master, was the first instance of recorded time, and in some of the pictures of St. Peter, and in artistic gold work to his memory, the goldsmiths have included the cock as the first announcer of time. But this is tradition that does not have a substantial basis to rest upon. The Catholic Church celebrates, on the 19th of May each year, the festival of St. Dunstan, who was originally a goldsmith by trade. He was a thorough artist, and being an exceedingly devout man, he devoted most of his time and talent to designing and executing works of art for the use of the church. He was a great student also, and finally became Archbishop of Canterbury, combining religious instruction with his goldsmith's work. Tradition relates that one day while he was at work making a gold cup for celebrating the Lord's Supper, the Devil appeared to him and tried to make a bargain with him for his soul, but the artistic Archbishop hastily grabbed his red hot tongs from the forge and seized the Devil by the nose and tweaked it most lustily, causing his Satanic majesty to howl with pain and to beat a hasty retreat. Dunstan was canonized by the church, which annually celebrates his memory. He acquired an extended reputation among the horologist and gold workers of his day for his elaborate examples of church plate and artistic decorations in precious metals. He died A. D. 988, and in Catholic countries is looked upon as one of the patron saints of the goldsmith's art. But fully 300 years before the time of St. Dunstan, another goldsmith had achieved high honors in the church, and at his death, was duly canonized. This was Eligius, known as St. Eloi. He was born at Limoges, France, in the year 588, of poor parents, who placed him at an early age, with a farrier to learn the trade of horseshoeing. But he had natural artistic tastes, and devoted more of his time to drawing, painting, and making ornaments from ivory and metal than to shoeing horses. He eventually began to fashion ornaments out of gold and silver, decorating them

with engraving and enameling them with his own designs. His work attracted much attention, and he finally established the famous enameling school at Limoges, where he surrounded himself with the best workmen and gave an impetus to that industry that made the city famous. He executed much church work in gold, and held the office of Master of the Mint at the Merovingian Court. Being a very pious man, well versed in theology, and having also a knowledge of languages, he was chosen reigning Bishop of the church. He constructed a golden throne for King Dagobert in 620, and later he constructed for King Chlotar two arm chairs of solid gold and of beautiful workmanship. It is traditional that while making the golden throne for King Dagobert the gold furnished largely increased under his manipulation, which is evidence that he was not familiar with the methods of modern goldsmiths. He made numerous shrines of precious metals for various churches in France and elsewhere, which were dedicated to different Saints.

Bonifacius was another famous goldsmith of Vienna, upon whom the dignity of canonization was bestowed by the church for his good works, his piety and the labor of a life spent in her service. He fashioned many church services in gold and silver, in original designs which were exquisitely embellished, and presented by him to different churches in Austria and Byzant. Whether he attained any church honors during his life or not our research does not inform us, but after his death he was made a Saint, and is held in high reverence in Catholic countries by goldsmiths and horologists.

Bishop Bernward, of Hildesheim, who, in 1193, was declared by the church to be a Saint, was also a famous goldsmith. He was the son of Landgrave Dietrich, and learned his trade of Thangmar, who outlived him and wrote his biography. After Bernward became famous and had received high honors from the government, he established at Hildesheim an academy for the production of chased work in gold and silver. He secured the most proficient teachers from England and Byzant, built extensive workshops, which he equipped in the most perfect manner possible, all on his own grounds, and personally superintended the work done by the pupils therein. He carefully watched all work in progress in its different stages, making valuable suggestions, and frequently making elaborate pieces entirely himself, notwithstanding his wealth and his position as Court Bishop. This school is conceded to have exercised a most beneficial influence upon the goldsmiths' art.

Several other Saints are mentioned who were more or less intimately acquainted with the goldsmiths' art, but those above named were full-fledged workmen, and their fame and subsequent elevation to the dignity of Saints was due to their skilled labor in the interests of religion. Goldsmiths of the present day may take courage from these illustrious examples. While they cannot all be mayors or aldermen, there is a possibility that some of them may aspire to canonization if their tastes incline them to religious works.

REPAIRING CYLINDER WATCHES.—It frequently happens that the cylinder edges are worn off, and it does not pay to put in a new cylinder; the watch may, nevertheless, be put into keeping a good rate by altering the escapement. Look at the cylinder and see if there is room either above or below the old wears to shift the action of the wheel. If the wheel holes are of brass, make one a little deeper, and put a shallower one on the other side; this may, perhaps, be sufficient. This must be done according as you want your wheel up or down. If the holes are stones, shift your wheel on the pinion by a new collet, or turning away more of the old one, as the case may require. If you raise your wheel see that it works free of the plate and top of the cylinder, and that the web of the wheel clears the top of passage. This last fault may be remedied by polishing the passage a little wider, if the rub is light. If shifted downward, see to the freedom of the bottom of cylinder, etc.

New "Otto" Engine.



THE new vertical "Otto" engine herewith illustrated, was recently put on the market by the makers, Schleicher, Schumm & Co., of Philadelphia. It is built with special considerations of the wants of jewelers—an engine of small power. It occupies little space, is cheap in running expense, simple in management and low in first cost. When running at full power the engine develops a full horse-power, while a simple governor cuts down the gas consumption. When only partially loaded, where the price of gas is \$1.50 a thousand feet, the cost of running varies from one to four cents per hour.

The governor consists of a single ball suspended from and traveling with the slide valve, and keeps up a uniform speed.

When not running, there is, of course, no expense, as engine is readily stopped without waste of fuel and it is started as readily. It is also perfectly safe from danger, and no parts of it are exposed to rapid wear. The slide and cover are sent in duplicates and are interchangeable.

This engine has been largely adapted for a variety of purposes, though only recently offered, and found quite desirable for the running of rotary fans in stores. It will drive eight to ten fans with ease.

Practical Method for Lengthening a Balance Spring.

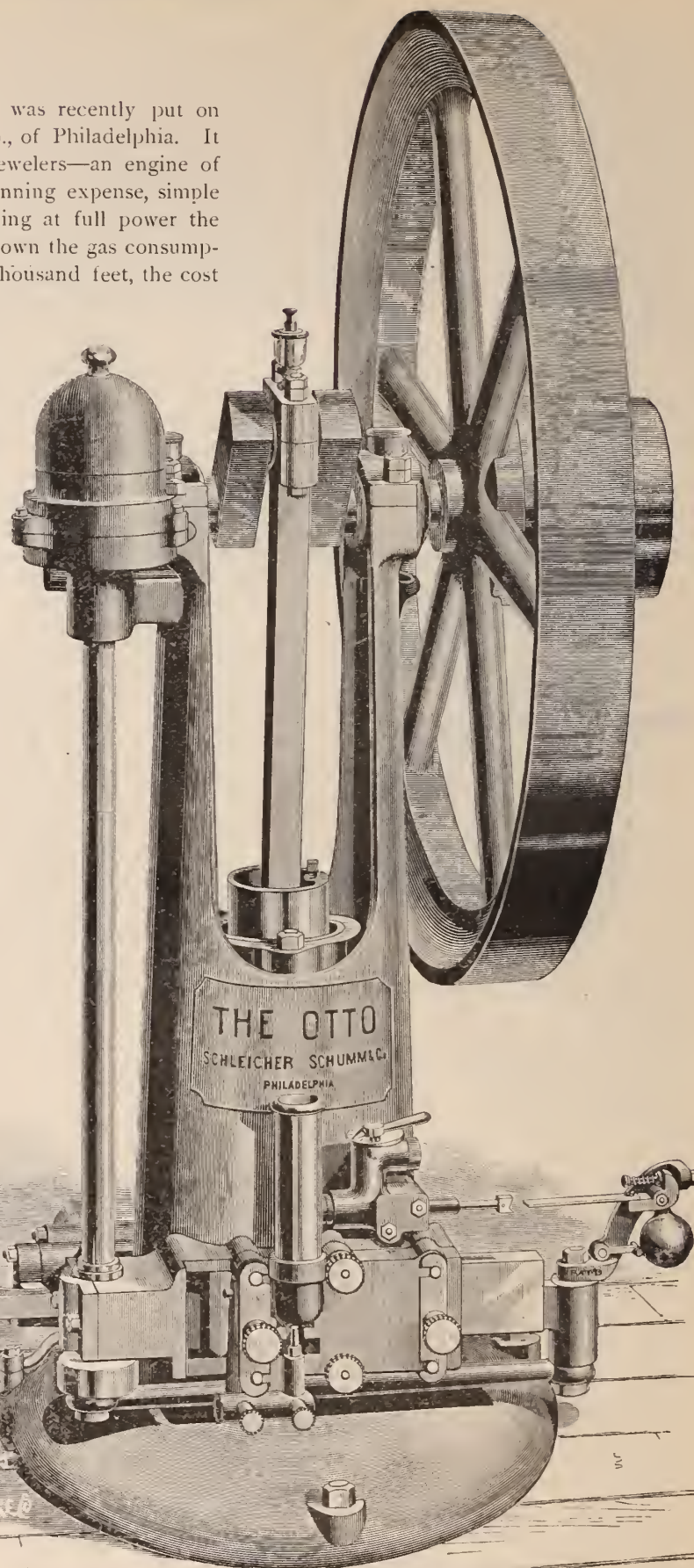
THE REPAIRER is occasionally compelled to regulate a watch with too short a balance spring, because the owner does not want to pay for a new spring, or else, if a country watchmaker, he may not happen to have the exact size on hand. Let us imagine that he has withdrawn the spring to its utmost, and still the watch advances. Apparently something is to be done, and in this extremity the most objectionable means are employed. A repairer recently asked the question in a German horological paper, and received all kinds of replies. One recommended to dip the spring in acid; another to scrape it thinner with a graver; and still another to make it weaker by grinding with an oilstone. The most heroic treatment was proposed lately in another horological paper. The scientist says: "When I find that a spring is too short and cannot be made longer by pinning, I employ a method that will invariably do it: I make the balance a trifle heavier with tin solder. I cut off two very small pellets of solder, put a little soldering fluid on the lower side of the balance, lay a pellet of the solder upon it, and then hold the balance rim on the edge of the alcohol flame until the solder has run.

"It does not require a great heat to do this, and it suffices to hold the rim on the edge of the flame, whereby it is prevented at the same time that the cylinder or one of the pivots is annealed, by carelessness. I then make the opposite side heavier in the same manner, and finally buff the rim, after which no trace of the work can be seen."

For what use, we ask, are the prize essays "on the balance spring," by Excelsior, Immisch, Sandoz, and others, who have wasted their talent and ill-spent lives by writing on timing and isochronism? Make a pyre of their writings!

A Mr. Barthelemy, of St. Ménéhouldt, a skilful watchmaker, recently published his method for obtaining satisfactory results in the *Revue Chronométrique*. He says:

"My method, which I have employed with excellent results for the last fifteen years, is, that in place of the graver I use a burnisher, with which I rub over the balance spring, the thickness of which is reduced by this means; its pores are closed and the quality of the spring is not whatever impaired; beside this, it is easy, with a spring treated in this manner, to restore it to its original coils.



"It requires only a moderate amount of practice to accomplish the purpose, and it is only necessary to hold the spring flat. I make the first trial with a spring that advanced 20 minutes per day. After I had smoothed a length of about 3 centimeters with the burnisher, I had produced a difference of 40 minutes—that is, the spring now retarded 20 minutes, while formerly it had advanced 20 minutes."

The country repairer who may occasionally be called on to do this, might by practice seek to acquire the necessary skill.

Lathes and Lathe Work.

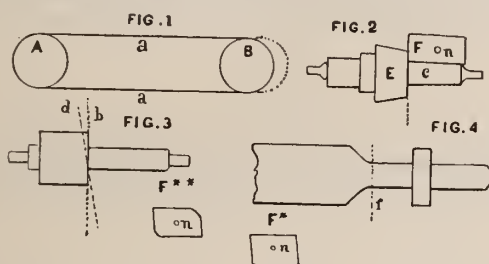
BY THE MODEL WATCHMAKER.

(Continued from page 30, August, 1888.)



VERY DETAIL of the wig-wag has now been described except to connect it to the lathe. For this purpose a small band is used extending from the pulley *S*, Fig. 4, cut in August number of THE CIRCULAR, to the pulley on your lathe arbor, as in this attachment as described, it was intended to do away with any countershaft. At Fig. 1, is shown the arrangement of the system. In this cut *A* represents the pulley on the lathe, and *B* corresponds to pulley *S*, Fig. 3, shown in August issue. The motion is conveyed by the band *a, a*, Fig. 1. The reader will please remember that the action of the cam *P* described in same issue would

cause the pulley *B* to be thrown back to the position of the dotted outline at *B*, thus tightening the belt *a* and causing the crank *M* to revolve and give a reciprocating motion to the frame *L*, Fig. 4, June number of THE CIRCULAR. It is quite unnecessary to repeat the drawings already given. The bell-metal slips spoken of in June can be made from long pieces of this metal to be obtained of the material dealers. They are to be cut to the proper length and filed into shape and the sides ground on a roughened glass plate with oilstone dust and oil. There should be an assortment of pieces for different jobs. To illustrate: suppose we have the lower part of a balance staff to finish and polish; we should have a slip shaped in transverse section as shown at diagram *F**, because the grinding has to be done in two directions, first on the flat surface of the staff on the line *b*, and in the second place on the slightly tapered staff *c*. In each end of the slips *F* is drilled a small hole to receive the center points or



cones, *h h*, Fig. 4, June number. The idea as the slip is it is free to revolve on these centers, and if it is of the right thickness and shape it will rest steadily on the job. After a staff is turned it is to be smoothed with a pivot file, to remove any graver marks, and then a slip *F* is used first with oilstone dust and oil; then the staff is thoroughly cleaned with soft bread crumbs to remove all grit, and a clean slip *F* substituted, using steel rouge and oil, or diamantine and oil. In mixing steel rouge only the smallest quantity of oil should be used, just enough to get the rouge into a stiff paste working it fine on a hardened steel lap with a knife blade. Alcohol can be used with diamantine only it dries so rapidly. Steel rouge, if properly prepared and used, gives the finest black polish. I spoke of grinding the slips into final shape. These slips after grinding and thoroughly washing should be cleaned with bread crumbs (the soft part of the loaf—and preferably rye) to get every particle of grit out of the metal. These slips can be used when the staff is either in the split or wax chucks. In finishing conical pivots the slips are rounded on the edges as shown at diagram *F*** and the slip, instead of being left loose to revolve freely on the centers so as to accommodate itself to the surface, is clamped tightly and the slip turned with the hand on the centers until the slip acts properly on the pivot. It will

be remembered that the frame carrying the arbor which produces the motion is arranged to slide back and forth; this was done so the slip could be adjusted to grind and polish at right angles to the axis of the lathe. This will be understood by referring to Fig. 3, where *H* represents a pinion. Now if the slip in the wig-wag works on the line *b* at right angles to the lathe axis the face of the pinion will be ground flat, but if the slip works obliquely or on the line *d*, the face of the pinion will be conical. The taper to which staffs and pinions are turned are usually about the same, although in foreign watches the arbors of pinions are usually cylindrical and have no taper, but in American watches the wheels are set on a hub which is driven on the arbor and for this reason most American pinion arbors are made about the same taper as we find in balance staffs, consequently we can use the same slips for grinding and polishing pinion arbors as we do for balance staffs. In such cases, as when pinion arbors are cylindrical, a slip is to be used exactly square. After such an attachment is made and one becomes accustomed to using it, all the little technical details, so tedious to describe, will come almost of themselves. I will leave the wig-wag here with the remark, that about all there is to learn in using one is to exercise scrupulous care to keep your process of grinding entirely separate from polishing, and never use a slip for polishing which has been used for grinding, as it will contain more or less grit. I will now describe how to make Swiss winding arbors from the solid wire. I don't insist, understand, on its being cheaper than to buy them, but for such of my readers as are so situated they cannot send out and get just what they want at a trifling cost, but have to wait for going and coming, and worse than all, after the delay find the anxiously expected arbor will not fit. For any person who has a large size American lathe the task is not a difficult one; and even with the smaller sizes it can be accomplished frequently in less time than we can fit one illy adapted for the job. Every watchmaker should have a back shop and a good sized lathe in it; and if he has not he should keep his mind to the idea he needs one and will have it as soon as circumstances will permit. Select a piece of steel wire a trifle larger than you need and by using double centers turn the arbor out in the rough so one end will go into one of your largest split chucks. The shape is shown at Fig. 4, and the part cut off at the dotted line *f* is to fit in the split chuck. Many watchmakers seem afraid of large jobs thinking, as I remember a red ink contributor saying in a trade journal, it detracted from the poetry of watchmaking to use a large file. To such I would say, some portions of your work must commence coarse no matter how fine you may finish it. For such large turning one needs a good sized band from the foot-wheel and that drawn pretty tight, as it is important to do work rapidly and cut a good sized chip which cannot be done unless you have the power.

A Curious Mechanical Clock.

A GERMAN paper says that a Jewish watchmaker, Herr Hyman Goldfaden, brother of the editor of an illustrated German paper in New York, residing at Kiow, Russia, has finished, after incessant labor for five years, two curious clocks, which excite great interest and admiration in Russian art circles. One of the clocks represents a railway depot and strikes hours and half-hours. Immediately after finishing the announcing of time on the bell, the entrance-gate of the depot opens, and figures representing all the railway officials, from the chief-superintendent down to the Russian government detective, march out in order of rank, stationing themselves in rows at each side of the gate; an inner door opens to admit a crowd of first, second and third-class passengers scrutinized by the officials and passing on to the platform, where a side door opens, out of which emerge the porters, who take charge of the luggage which they store into the vans. The passengers run confusedly to and fro

with more noise than necessary until the first bell rings, when the locomotive takes in water. A second and third bell ringing in quick succession ensues to announce to the passengers to be seated, when they rush helter skelter into their respective compartments; the locomotive gives a loud whistle and glides steaming out of the depot, with all the cars in train. The figures are beautifully made, elastic in their movements and afford a really interesting sight.

The second clock represents a most useful alarm clock, combining timepiece, alarm, and waiter serving a cup of hot coffee. The moment the alarm begins to sound, an additional mechanism lights a spirit lamp in connection with the clock. Over the spirit lamp, the sleeper who intends to be roused, places, before going to bed, a small tin saucepan with water and coffee essence, consisting of a preparation of coffee, condensed milk and sugar, which gets boiling by the time the person is washed and dressed to partake of an automatically prepared breakfast



A Lady's Rambles Among the Jewelers.

THE FASHIONABLE world is gradually turning its face homewards and the inactivity prevailing in the entire trade during the summer is already a thing of the past. New goods are in the shop windows and in the show cases, and the aisles of leading houses such as Tiffany's, Gorham's, Whiting's, and Starr's, if not crowded, are at least comfortably thronged with seekers after novelties in jewelry, bric-à-brac and silverware.

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THE NEW things already in stock give evidence of efforts on the part of designers and manufacturers to please a capricious public, for there is no end of new patterns and diversified styles of finish, although, as yet, I have seen no radical changes or startling innovations to report.

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A POPULAR line of goods just at the present moment appears to be personal trinkets having a bearing, in style or form, on the political campaign. Political badges which proclaim the wearer's politics head the list and have been sold in marvelous numbers. For admirers of campaign scarf pins, with long purses, have been provided Roman chanticleers with gems for eyes, and enameled plumage. This barn-yard fowl which becomes the typical bird of victory at each recurring campaign, is this season one of the favorite models for both scarf pins and badges. A less pretentious campaign scarf pin consists of the monograms of the favored candidates wrought in gold cord, or in colored enamel on a gold plaque. Scarf pins designed for the exclusive benefit of democrats are square in form and enameled so as to simulate a red bandanna. In watch charms have appeared gold rims in which are set the picture of Cleveland or Harrison; then there are gold wheels in the hubs of which are inserted the initials of the favored candidate. Moonstones have suddenly been proclaimed "lucky," and are figuring in badges worn by both parties. Celluloid, which has served so many varied purposes, is impressed into the service of the campaign in the form of shields, horseshoes, and wishbones for badges.

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IN A general way, it may be stated that breastpins grow larger,

and in the regular brooches there is a marked tendency to regular shapes, quite round and oval forms being favorites. New patterns seen recently consist of a brooch made by a circle of gold heavy-linked chain; another of same form was composed of a twisted rope of gold. These round brooches favor the costly miniature medallions, many of which are now mounted in a simple circlet of gold.

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AN ATTRACTIVE round brooch represents a wheel, the hub of which is a big diamond from which radiates the sparkle of lesser diamonds set at regular distances on the knife-edge spokes.

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AN ODD brooch is one that represents in gold a target, the center of which is pierced by a gem-set arrow.

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WHILE the tendency to brooches of regular form is stronger than it was last season, the new goods are represented by delightful conceits in way of brooches, flower pins, fly pins and lace pins that are confined to no restrictions as regards their outlines. Cats have appeared as designs for ornaments, including brooches and scarf pins. Cats of silver with Rhine stones for eyes, and gold cats with eyes of diamonds are in request, so are cat's-eye stones cut to represent a cat's head and set in gold or silver frames.

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MUSIC lovers will fancy the dainty tambourines, violins and mandolins, whether of gold or silver, or enameled to imitate, even in coloring, the instruments they represent.

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FLOWER pins appear to be as popular as ever. There have appeared, not only the pins representing a single flower, but a branch of blossoms, or a bouquet in which a variety of flowers appear. Round branches of flowers have also made their debut in the world of fashion.

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LOVELY flower pins are made of numerous but small pearls, turquoises, or diamonds encrusting a flower of gold, and there are attractive enameled flower pins outlined with diamonds or with pearls.

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PANSIES of natural size are the fashion now; the petals are beautifully formed in enamel, and the gradations of the varied tints are most faithfully given. Sometimes one sees three large parma violets tied up with gold threads and having dew drops of diamonds on their petals. The edelweiss is admirably copied in dull enamel; so is the morning glory and a number of other favorite blossoms.

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THE ADMIRERS of fly pins have a wide field for selection; there are diamond beetles twice as large as life, enormous bumble bees, dragon flies and butterflies, all glittering with the favorite gems—a never-ending array. A new comer among these pins is the hammered gold butterfly.

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TWO LINKS of a cable chain, the ends of each studded with sapphires and diamonds, make a pretty design for a brooch.

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A POPULAR pin for all informal occasions is the silver pin, which is made up in most, if not all, the favorite patterns found in gold ones.

AN ORNAMENT that is all the while increasing in favor is the necklace. Every lady who aspires to a fashionable collection of jewelry has one or more necklaces with a pendant attachment in her jewel case. The pendant is as fashionable as the necklace and frequently contains the gem of the outfit.

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EAR RINGS divide favor with ear screws and both are more worn than they were a twelve-month ago. In ear rings, as in much of the jewelry now made, the desire for gems is apparent. In many of the principal designs small stones appear, enhancing the effect of the design at a very moderate addition of cost. The designs run, for the most part, in small sizes.

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OF the making of decorative hair pins there seems to be no end. A tiny horseshoe of gold with nails of garnets or moonstones is one design. Two of these horseshoe pins with their points crossed just below the knot of back hair, not only furnish a very efficient support to milady's "love of a bonnet," but are esteemed as a pleasing ornament to the toilet.

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GOLD loops set with diamonds and silver ones set with Rhine stones figure on hair pins. A quite new design is a sprig of lilies of the valley with leaves in green gold. Then there are pins finished with balls of gold, some plain, more engraved and more yet studded with jewels.

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HAIR ornaments, in some cases, take the form of combs. A striking example in this line is a comb, the top of which simulates a trellis over which are trained roses and their foliage. Another attractive comb is finished by a broad band of gold, showing pierced work in floral pattern. The small side combs introduced last season are still to be seen, being convenient for holding in place the puffs and rolls that appear in some styles of coiffure.

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BRACELETS and bangles are on the top wave of popularity. Young ladies, especially, delight in wearing, on informal occasions, as high as twenty-four silver bangles of differing designs on one arm. Occasionally these bangles represent in number the letters composing the wearer's name and are tied together by a slide of silver.

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WIDE license is given to designers and manufacturers in the fashioning of bracelets. These may be exceedingly fragile affairs or quite massive, as best suits the fancy. Many new patterns have appeared in curb chain bracelets and other bracelets of a flexible nature. A pleasing instance of the latter is a bracelet composed of a series of little gold cubic squares tied together by fine gold links and set on their four surfaces with stones of various colors.

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A QUITE new bracelet is one the chains of which are old silver, holding in place gilt crosses, each cluster being separated by a ball of bright silver. Another ball is suspended as a charm.

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WATCHES for ladies' wear run small in size and the present taste seems to be for decorated cases. Enameling is much used in the ornamentation of watch cases. On silver watches appears much fine etching.

NOT ONLY English women but Parisians have more or less adopted the leather bracelet for holding a watch. Much prettier than these, however, are the chain bracelets with a watch set in the center. Imported goods show a decided tendency for placing watch dials in all kinds of articles, as a paper weight, a card case, a pocketbook, or in the handle of a parasol.

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THIS rage for inserting tiny watches in various articles has even reached the vinaigrette and a dial is to be seen in the center of simulated cut glass scent bottles. These are circular and fluted-sided. In fact the watch is surrounded by a circle of cut glass with a gold-capped top forming a vinaigrette. Chased silver is sometimes used in place of the glass but the shape remains the same.

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A NEW and peculiar class of timepieces has lately been brought before the public in form of what are called rock crystal watches. These watches are of ordinary size, with cases and plates of Brazilian pebble or rock crystal, thus rendering the watch transparent and exposing to view the wheels and other portions of the interior mechanism. In some of these watches the dial is made in the form of a skeleton of gold. Above each hour mark is a diamond and between the diamonds there is a ruby for each minute.

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THERE is a fancy now with many of having portraits reproduced in miniature on the inner sides of gold and silver watch cases. A novelty of European origin is the fan shaped watch. Shell shaped watches occur among the decorated silver ones when on chandelaines.

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THE queen still reigns among watch chains for ladies, though short vest chains of slight construction are worn by many.

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FOB CHAINS and ribbons with seals attached are occasionally seen, there being an effort on the part of some of the so-called "good dressers" among men to revive this style of their grandfathers. The vest chain, both single and double, remains however, a popular style.

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SEALS are much worn by men on their watch chains and so are locketts, which latter, by the bye, appear to have been revived to stay.

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IT is safe to say that finger rings are in greater demand than ever. Both sexes wear them, and both sexes, in large measure, use their own personal taste in the selection of these ornaments. Fashion does not prescribe many limitations in the matter.

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A FAVORITE ring is one in slender gold setting containing a small but fine gem. A ring of gold rope tied in a tiny knot on top and set with a gem, is attractive.

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THE FANCY for silver rings set with gems continues among men, and there are many novel and ingenious devices shown in these this autumn. Two snakes twisted one above the other, and with heads meeting on top, furnish a popular design especially when the eyes of the serpents are represented by small gems. A plain gold or silver band with a gem sunk in the center, is another popular ring. A

ram's head, the horns of which turn back and meet so as to form a ring, is an old idea revived in these rings.

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SEAL rings are worn by both sexes and are fashionably cut with monogram or crest or favorite motto. To be in good form the seals should run small to medium in size.

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LADIES continue to give preference to the single buttons, which may be square, oval, round or irregular in form.

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NEW YORKERS still cling to the cuff links, though men in many other sections give the preference to single buttons. These links often show buttons of differing design of finish. Stylish buttons are often set with gems of differing colors, as a small diamond in one button, a ruby in the other.

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THE GREAT favor shown to enameled and all gold and silver jewelry has not, unless appearances are very deceptive, at all decreased the popularity of gem set ornaments. Never were gems in greater demand than at the present time; especially the smaller ones that suit purses of average length.

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OPALS, since their re-introduction, have made rapid strides in public favor and are now counted among desirable gems. Fine cat's-eyes also fine moonstones are in demand. Garnets have had quite a boom, especially the finer specimens, when mounted in artistic silver settings.

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MORE and more fanciful do the pretty trinkets with which ladies like to adorn themselves become. The accessories of their toilets must be novelties indeed to please the fastidious tastes of modern belles, and inventors rack their brains in the hope of finding some fresh idea to suit the fancy of the moment. Some of the newest and daintiest are little fal-lals that can be attached to the popular chate-laine.

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SCENT bottles and vinaigrettes have always had a large amount of attention expended on them and at no time more than the present. Very tasteful are the little cockle shells fitted so as to hold scent and made as nearly as practicable after the natural form with all the little crinkles intact.

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THERE have appeared charming little memorandum tablets in imitation of a Japanese fan, the outer covers being of silver and small square mirrors "chic" enough to excuse a pretty damsel for carrying about with her an article so conducive to the cultivation of vanity.

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THERE is abundant evidence, everywhere one looks, that our silversmiths have not been idle; neither have they waited until the approach of Christmas to exhibit novelties. While no startling changes have appeared, either in form or finish, shoppers are furnished with quite new effects gained by modifications of old designs and new combinations of styles in ornamentation and finish, already familiar. Hence, many of the novelties in table ware and bric-à-brac must be seen to be duly understood and appreciated.

CONSPICUOUS among the new things are quaint little toilet trays and bon-bon receivers, along with an unique assortment of bon-bon spoons. These pretty trifles are welcome in everybody's boudoir and drawing room, and therefore promise to have quite a run. Some of the bon-bon receivers affect the grotesque, as an ape standing on a twisted trunk holding a little basket of silver wicker-work. Other bon-bon saucers are round, square, semi-circular and triangular. Some are copies in imitation of old-time bread trays; others are cunning little baskets fashioned in silver wire.

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THE ASSORTMENT of bon-bon spoons is as varied as that of bon-bon trays. The bowls are medium to large in size, the handles running generally short, but ornamented. Some are spoon-shaped, others are little shovels.

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ICE CREAM spoons are out in unique patterns with gold-lined bowls and elaborately wrought handles.

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IT is no longer possible to say that this or that finish in silver is most fashionable, the truth being that any style of ornamentation and any finish that presents a pleasing appearance is fashionable. The oxidized form is counted as desirable, and all sorts of silver objects, large and small, are finished in this manner. Oxidized effects are to be seen in combination with etching, and it is also used, in some cases, with *repoussé* work. What is known as Assyrian work is also included in oxidized goods.

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Repoussé work in white finish is in favor. Much of the new silverware shows a combination of fluting and bright finish.

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THE OLD, old satin finish finds many advocates yet, and appears in both solid silver and plate.

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TEA SERVICES of frosted silver have appeared. An attractive design is in frosted silver with twisted incisions running around the pieces.

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NUMBERED with pleasing effects in *repoussé* work are the backs of brushes, powder boxes, and other pieces pertaining to toilet sets, with conventional arrangements of ivy in Renaissance style. Backs of brushes and hand mirrors have appeared in Renaissance style with the ground matted, an open space in the center appearing for a monogram.

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SILVER frames for photographs have appeared in Louis XV. style, showing the old scroll pattern, either oval, square or round. Attractive frames are also made of silver basket-work, while still others are of leather with silver corners. Roman gold frames have also appeared, as have frames rococo in style.

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SILVER mounted leather goods are meeting with deserved patronage. Embossed crocodile leather articles are to be seen in great variety. Alligator leather, pigskin and Russia leather, all figure in these goods.

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ATTRACTIVE pocketbooks of Russia leather are made to simulate

an envelope with a solid silver fastener made to represent a seal. New pocketbooks of every description are shorter than those of last season, the tendency being toward the square pocketbook.

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NOVELTIES in match cases, decidedly costly and elegant, by the way, are of corrugated gold. Cigarette cases in similar pattern have also appeared. Silver ones, some of them, have the owner's monogram or initials on one corner wrought in gold.

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A NOVELTY likely to gain a welcome from all smokers is found in cherry wood pipes with covers of open-work silver.

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WITH the present craze that prevails among ladies as well as men for horseback riding, riding whips, or rather crops (for the latter appear to have the preference) have become of decided prominence. The sticks are of various woods such as appear in gentlemen's canes, while the heads are of silver mingled with ivory. The handles are made in many designs, including favorite ones on ladies' parasols and men's sticks.

ELSIE BEE.



[THE CIRCULAR is not responsible for the opinions or statements of contributors, but is willing to accord space to all who desire to write on subjects of interest to the jewelry trade. All communications must be accompanied by a responsible name as a guarantee of good faith. No attention will be paid to anonymous letters. Correspondence solicited.]

A MODEST REQUEST.

To the Editor of the Jewelers' Circular:

I want you to publish J. B. M., of ———, W. Va., as a fraud in the trade. He has been a jeweler in good standing heretofore, but now he is quitting the business to study medicine and he is offering to teach every upstart the business in a week and then give him an introduction to wholesale houses so they can buy goods at wholesale prices, thereby greatly damaging the trade of legitimate jewelers. Will you kindly warn the trade against selling him any more goods, as I hear he is now offering anyone watches, etc., at net jewelers' prices. He is not entitled to trade consideration any longer. Please publish this in your next issue, and oblige a jeweler in good standing.

I. A. KINCAID.

P. S.—Please send me a sample copy of THE CIRCULAR when the foregoing letter is published.

I A. K.

Lookout, W. Va.

[The altitudinous "cheek" of Mr. Kincaid is something that would excite the envy of a highwayman's mule. Acknowledging that he is not a subscriber to THE CIRCULAR, he nevertheless expects us to fight out what is evidently a personal grievance in which no one but himself has any interest. Of course we have substituted initials for the full name of the individual he would denounce. To print the name would lay us open to a libel suit, and our defense would rest entirely with Mr. Kincaid, who would probably "go back" on us when he gets over his ill temper. His request for a sample copy of THE CIRCULAR in which the foregoing letter is printed is a good illustration of the colossal "cheek" of the individual. We beg to inform him that the subscription price of THE CIRCULAR is two dollars a year, and he can, by sending that amount, have his sub-

scription entered so as to include this number.—EDITOR THE JEWELERS' CIRCULAR.]

To the Editor of the Jewelers' Circular:

Will you kindly give me some information, and refer me to the sources where I can obtain data concerning the finding of diamonds in the U. S.

NORTH CAROLINA.

[See article on "Precious Stones in the United States," by Geo. F. Kunz, in *Harper's Magazine*, Dec., 1887, page 97, and colored plate which gives figure of the 23 $\frac{3}{4}$ karat Dewey diamond, found near Manchester, Va., in 1856. This article states that one hundred diamonds have been found in the United States. The U. S. Geological Survey sent Mr. Geo. F. Kunz to examine the rocks in Elliott County, Kentucky, but no diamonds were found. If you wish a fuller account, send \$2.00 to the Dept. Mining Statistics, U. S. Geological Survey, Washington, D. C., and they will send you four reports, 1883-84, 1885, 1886 and 1887, in which you will find one hundred pages on diamonds and other precious stones in the U. S. These articles have been for the most part re-published in THE CIRCULAR.—ED.]

A JEWELERS' EXHIBITION.

To the Editor of The Jewelers' Circular:

The season of fairs and exhibitions throughout the country, which is generally at its height about harvest time, has led me to make a suggestion to the members of my trade, with your kind indulgence. THE CIRCULAR for the several years that I have been its subscriber has been endeavoring to revive public interest in jewelry in many ways, and also by means of Elsie Bee's fashion paragraphs, having them reprinted in local papers, etc. Other papers in the trade have also recognized that there was a lack of public interest in jewelry, and have followed in the footsteps of THE CIRCULAR. My suggestion, if the trade will be patient to hear it, is to have a public exhibition of jewelry the same as farmers have agricultural fairs. Let some association of jewelers start it, and let it be a regular thing. Prizes for excellence should be awarded by competent judges—excellence of design, excellence of finish, excellence of work—which would serve to stimulate jewelers to produce better wares. And how large and interesting a jewelers' fair could be made to be! What with watches, diamonds and fancy goods, besides an unlimited variety of jewelry, bric-à-brac and artistic glass and porcelain, an interest such a fair would create! I venture to say the receipts at the ticket office would cover all the expenses, the prizes, and leave something in the pockets of the projectors of the scheme. What workmen there are, in silver and in gold, who now labor for wages alone, who, if an exhibition of this kind were regularly held, would strive to earn a prize besides. A prize means honor; and honor is above mere wages. An exhibition such as I suggest will be more attractive to a great mass of people than a horse fair or a dog show. It will revive public interest in jewelry and will instruct the manufacturer as well as the public, for what meets with the most approval will be in most demand, and the manufacturers will better be able to feel the "pulse of the people."

J. L. S.

Buffalo, N. Y., Sept. 10th, 1888.

The Lantern Pinion.

AN EMINENT German watchmaker, of Glasshütte, Saxony, in answer to a correspondent who expressed himself in favor of the lantern pinion, says: The cycloid depthing, in a common pinion of less than twelve leaves (the driving before of ten leaves does not yet occur before the line of centers), supposing it to be of a correct shape, does not prevent the driving from being uniform. The ques-

tion is, simply, whether a greater quantity of the motive power is consumed.

To ascertain the different proportions, I took the depth of a common 6-leaf pinion, engaging with a 60-tooth wheel, and placed it in positions of 20° before and 20° and 40° behind the line of centers; also a 6-leaf lantern pinion, engaging with a wheel of like number of teeth, and by adding friction, calculated the consumption of power must commence at least $17^\circ, 44', 15''$ before the line of centers. I calculated for a depth with lantern pinion the positions of $20^\circ, 40^\circ$ and 60° behind the line of centers, assuming the ratios of friction in both cases at 0.14.

The following was the result:

Mean motive power consumed by friction of common pinion is 0.098; lantern pinion, 0.124; consequently 10 per cent. in the first case, nearly $12\frac{1}{2}$ per cent. in the last; the latter uses $2\frac{1}{2}$ per cent. more motive power.

An increase of motive power also increases the friction of pivots; and $2\frac{1}{2}$ per cent. is not enough for practical use—4 per cent. would be nearer.

From a theoretical point of view, we find that common pinions are better, and from a practical, also, we find that they are better.

The New York Jewelers' Association.

At the Annual Meeting of the New York Jewelers' Association, held at their rooms on Tuesday, September 4th, the election for officers resulted as follows: President, H. Blanchard Dominick; Vice-President, Augustus K. Sloan; Treasurer, Henry E. Ide. Board of Directors: Seth E. Thomas, Joseph B. Bowden, George C. White, Jr., Alfred H. Smith, William R. Ailing, James E. Spencer, George C. Taylor, George W. Shiebler, William H. Atwater.



[FROM OUR SPECIAL CORRESPONDENT.]

CHICAGO, September 20, 1888.

The Inter-State Exposition on our lake front has opened its doors to the buyers and sight-seers who annually take advantage of excursion rates, and a goodly proportion of these are jewelers.

Of course these visiting jewelers occasionally join the throngs which fill the big glass-roofed building, but they do not forget the main purpose of their visit. Each day sees them in the warerooms of Simpson, Hall, Miller & Co., and those other representative establishments, whose exhibits are each an exposition of the year's progress in the different branches of the jewelry trade. Chicago's jobbing jewelers are busy, prosperous and happy.

The Meriden Britannia Co. make a display of silver plate in the Exposition Building, which is by all odds the best collective exemplification of artistic handiwork shown there. Their booth is a hollow square in shape, built of ebonized woods and trimmed in gold; three glass walls of this square are filled with silver plate, *repoussé*, antique and oxidized silver predominating. The fourth side of the square marks the entrance to its center which is a tastefully furnished room, perhaps twenty feet square with a domed roof, blue satin hangings and marble paneled dado.

Three hundred and seventy-five dollars seems quite a price for a silver plated water service, until the one shown by the Meriden Bri-

tannia Co. is seen, so also does one hundred and seventy-five dollars for a case of plated flat-ware. Each serves as an illustration of the enduring and increasing popularity of this trade, wise-aces to the contrary notwithstanding.

Mr. Burchard, the Chicago manager of Simpson, Hall, Miller & Co., showed the observer a line of new nut and fruit bowls in elaborate designs of antique style. They are silver plated and gold lined, strikingly novel in both shape and workmanship. The Gorham Mfg. Co. show new berry bowls in sterling silver of inimitable art character.

The Elgin Watch Co. are so far behind orders that they are making no exhibit at our this year's Exposition. A visit to their factory revealed to the observer 2,500 workers who turn out 1,500 watch works every day. They form a colony of their own whose social life, church organizations and aid societies are features quite distinct and separate from the town proper.

Two Chicago jewelers are obtaining a deal of advertising; one by shooting thieves, the other by teaching thieves. Joseph Lane, a jeweler at 383 South Clark st., obtained his present celebrity by filling a negro burglar's leg with 32-calibre bullets. Mr. Rosenthal's notoriety is of a different stripe; altogether cowardly and ignoble. His jewelry store at 437 South Canal st., was a "fence" for goods stolen by a gang of thieves educated and directed by him. Chicago jewelers would be glad if Mr. Lane were allowed to make Mr. Rosenthal's head his next target.

Mr. Benj. Allen will return from Europe to his large wholesale establishment here next week and may be surprised to find his firm in the retail trade at Ft. Smith, Arkansas. The facts are that Mr. L. G. Day, of that place, being pressed by creditors, transferred to Benj. Allen & Co., his whole stock invoicing between \$3,000 and \$4,000.

Mr. L. G. Day went to Ft. Smith some six years since, but has found it hard to compete against the larger and more popular house of Klein & Fisk, who do their profitable business on a cash basis. Added to this, rumor had it that what Mr. Day made by day he spent at night, and when he recently advertised to sell all goods at cost, his creditors became uneasy. His assets equal his liabilities.

From Ft. Smith south, merchants ought to be better provided with cash just about now than at any other time. The chief crop of this section, cotton, comes into market in September, and from then until May the merchant gets prompt pay and is financially easy. Then comes a period of stagnation until another September fills their pocketbooks. Many manufacturers and jobbers, more especially east of here, fail to understand this situation and oftentimes force a debtor at just the wrong time. Mr. F. J. Klein, the leading jeweler at Ft. Smith, has not a very large foot, yet he can plant it on two territories and one state without moving from his town. The Cherokee and Choctaw Nations each have their boundaries converging at Ft. Smith.

Mr. C. F. Knights was found studying a map of Texas, over which Mr. Barlow, representing C. H. Knights & Co., is now traveling. A big batch of orders had just come from him. Mr. Knights says Texas trade has its characteristics, each less understood than it should be. South and east from Fort Worth, cotton is the staple product, and what the observer has stated about credits in cotton districts is emphasized by Mr. Knights' experience. North and west from Ft. Smith, the Texas crop is wheat and corn, and this grain belt is effected by all causes which affect Iowa or Minnesota.

The close observer going in and out amongst Chicago's jobbing jewelers is struck with the fact that the orders left average of less amount than in former years. So far from this being a sign of prospective dullness it is most satisfactory, not alone in jewelry but in all branches of trade; the wise merchant is he who buys often, and turns his stock frequently. The old plan of a big load-up of stock twice a year on long credit has made more bankrupts in the past than it will in the future.

Mr. Knights is not alone when reporting the aggregate sum total

of sales somewhat less than for the corresponding month of a year ago, but frequent re-orders will even up the year.

This view of things financial is also endorsed by the Chicago Jewelers' Association, which about two months back organized a collection department. From the date of its first claim, July 18th to September 1st, the total number of claims received was 141, representing a face value of \$7,425.11. On these claims they have collected in cash \$1,282.54 in addition to \$1,007.62 paid to the members direct, after notification by the department, making a total of \$2,290.16 or nearly one-third of the total claims, four of which were pronounced worthless.

One of our most prominent and popular watch-selling bachelors is about to become a benedict. Mr. Payson, who represents the Courvosier-Wilcox Mfg. Co., has furnished a north side flat and will add its chief ornament within a month. Miss Greene is her name, whose stepfather is three or four times a millionaire.

Mr. C. D. Peacock, whose pushing enterprise has given him the most profitable retail jewelry trade in Chicago, has returned to business from his pleasure tour. The Peacocks, father and son, have been selling jewelry in Chicago for half a century, every year of which has added good fame and esteem to this pioneer house.

Alister, Eppenstein and Hirsch, each representing a well-known firm, have been disciplined by the National Association of Manufacturers and Jobbers of American Watches. Opinion here is pretty well divided as to whether the fines were merited, but neither of the gentlemen seem aged or careworn. Mr. Alister told the observer that his senior, Mr. Norris, must decide whether to take the punishment or resent it, for he was too busy filling orders.

The news from Providence of Mr. Gorham Thurler's death was received here with profound regret. He had many admirers in Chicago, and most of these who found the doors of the branch warehouses here closed on the day of his funeral did not know until then that the honored treasurer of The Gorham Co. was at rest.

Your observer has as yet seen no correct version of the Rudd-Davies matter. After the disastrous Clapp & Davies failure of over a year ago, Rudd, who had saved some money from his salaried position with the firm, bought out a north side livery stable, but Davies waited for an opportunity of again trying his fortunes in the jewelry trade. Rudd meanwhile tired of stabling and suggested to his old associate the establishing of a new jobbing house to be known as The Rudd & Davies Jewelry Co. They engaged rooms over Lapp & Flershem, and Rudd was to furnish his share of the capital by selling his livery stable. This was found easier said than accomplished and after the stock was purchased Davies, who has many warm friends here, was advised to return all the goods bought and quit before beginning. He did so.

Mr. Otto Young's old partner, Mr. W. B. Clapp, who since selling his interest in W. B. Clapp, Young & Co. has lost most of his money, has just opened a stock of jewelry on Dearborn street. Caleb Clapp (formerly of Clapp & Davies) is associated with him and both have the best wishes of the observer, who knew the firm in its good old days. Otto Young is to-day worth a round million.

From purely local motives some of the jobbers here have patronized local trade journals. One of these said to the observer to-day: "I have dropped out of these local sheets entirely and THE CIRCULAR is the only magazine that will contain my October announcements." Said another: "Trade journals, so called, are springing up like mushrooms and in my opinion it is only the old and substantial time-tried stand-bys that have any excuse for existence."

The observer hailed Mr. R. S. Hawley, of Chadron, Nebraska, the other day and asked him for notes concerning the jewelry trade in his state. "Didn't you know I was dead?" asked he. "How so?" asked the observer. "Look into the *Jeweler's Journal* and you'll see my obituary," and sure enough there it was together with the names of a dozen others, most of whom the observer has since heard of as walking this earth and selling jewelry.

Also under the head of "Obituary" in the journal are "Davies &

Rudd Co.," showing that the whole personnel of the firm individually died when the business became defunct.

Among the prominent jewelers who have seen Chicago recently are Blythe, Lehman & Co., Denver, Colo.; Ozias Ripley, Champaign, Ill.; O. B. Wilson, Collinsville, Ill.; A. T. Hall, Janesville, Wis.; Ives, Dunning & Co., Manning, Iowa; Klein & Fisk, Fort Smith, Ark.; G. Scherzinger, Fond du Lac, Wis.; J. B. Eberhardt, South Chicago, Ill.; J. W. D. Scholte, Pella, Ia.; Adams & Peddicord, Mason City, Iowa; J. F. Ingalls, Waukegan, Ill., all of whom made their headquarters with Simpson, Hall, Miller & Co.

Others prominently identified with the jewelry trade who have visited this market recently are: W. M. Boynton, Manchester, Ia.; Max Meyer & Bro., Omaha, Neb.; H. Andreas, Omaha; N. J. Eddy, Portland, Mich.; W. H. Booth, Sioux Falls, Dak.; D. C. Sedgwick, Bonepart, Ia.; Webb C. Ball, Cleveland, O.; G. M. Rigdon, Streator, Ill.; H. J. Vincelette, Hebron, Ill.; O. C. Husted, Tower City, Ill.; H. E. Fox, Emporia, Kan.; W. H. Vail, Valparaiso, Ind.; Muck, Welsh & Phelps, St. Louis; M. B. Wright & Co., St. Louis; Parsons, How & Co., La Porte, Ind.; Win. Arnold, Ann Arbor, Mich.; K. H. Clarke, St. Joe., Mo.; A. Poetz, Mobile, Ala., and many others.

Mr. C. S. Raymond returned from the east, via Chicago, to his new business, opened a month ago in Omaha.

Mr. E. E. Chandier, of Boone, Ia., and Secretary Keokle of the E. Prusser Jewelry Co., Milwaukee, were among recent buyers of The Gorham Co.'s sterling silver, as also were J. B. Hudson of Minneapolis, C. F. Gordon, Shreveport, La., and K. H. Clark, of St. Joseph, Mo.

Mr. A. R. Knights, who was in the city last week, is a younger brother of C. H. Knights and has the largest jewelry store in Dubuque, Ia., where for fifteen years he has done a most successful and steadily increasing business. Of course he spent most of his time while here in his brother's big wholesale jewelry establishment, as did also Mr. P. Robelstad, who supplies Elgin's population with their jewelry; for the first time since leaving Europe, nineteen years ago, he has just made a visit to his fatherland and returns quite satisfied to continue his successful experience here. Others who left orders with Mr. C. H. Knights & Co. were H. Holland, of Marshall, Texas; A. J. Warner, of Minneapolis, Minn.; N. V. Cole, of Michigan City, Ind.; O. Riley, Champaign, Ill.; F. C. Cook, Janesville, Wis.; D. F. Sullivan, Rockford, Ill.; Frank Sell, Elkhart, Ind.

There is nothing more essential to the proper display of the jewelry these many firms have purchased here than handsome trays and show-case fittings. These need not of necessity be of great cost. The observer was shown ring, bracelet, pin and chain trays at W. S. & J. B. Wilkinson's factory that contain two essentials—moderate cost and elegance. Their advertisement in this number gives further particulars, but perhaps it leaves unsaid that for ten years the shrewdest buyers have selected Wilkinson trays as the very best to be had anywhere at any price.

There are two other specialties meriting the attention of all jewelers. The changing of old English watch cases to American stem winders and the changing of old gold into new rings. G. F. Wadsworth, who has recently moved into larger premises at No. 180 State street has made the first named of these specialties a study for twelve years past, and F. Ternendt & Bro., of 57 Washington street, have for their specialty the melting of old gold into new gold rings; both these firms do work for the trade only.

THE CIRCULAR'S OBSERVER.

PLATING WITHOUT BATTERIES.—By the hydro-plastic process of Mr. Levy, thin coats of metal upon other metals without the use of batteries or dynamos. It depends upon a double composition, and permits of the electrolysis of all metals. The article to be coated is suspended by a zinc or iron wire in a solution of a suitable salt—as chloride of nickel for an iron or copper object—when the metal is deposited from the solution and the wire is attacked and dissolved.



[FROM OUR SPECIAL CORRESPONDENT.]

CINCINNATI, Sept. 21, 1888.

The jewelry trade is looking up in this city. The retailers are all busy with a full quota of clerks and the wholesalers are actively engaged in filling orders for holiday goods. It is an abrupt change from a long, dull summer.

Mr. Frank Flint, proprietor of the jewelry establishment in the Palace Hotel on Vine street, went to New York a few days ago. During his absence he left his interests in the care of two clerks, Jerome Murphy and Dave Kauffman, who have been in the habit of relieving each other from duty when meal time rolled around. A few evenings ago, about six o'clock, Mr. Murphy was thus left in charge of the store. He had not been alone but a moment when a tall, thin-featured, smooth-faced, sunburnt stranger arrayed in black sauntered in and asked to be shown a solitaire diamond ring displayed in the show window. The clerk produced the ornament and laid it on the glass show case. The stranger picked it up, turned it over a few times and remarked that it was a little off color. "Yes," said the clerk, "but it is without a flaw. Its weight is ten and three-eighth karats and we only ask four hundred and fifty dollars for it, only a trifle above its original cost." The stranger again turned it over, again critically examined it and then asked the clerk to show him another ring. Before the request could be granted and with the ring still in his hand the stranger sprang to the doorway and was through it before Mr. Murphy could get from behind the counter. When he did reach the street a moment later the stranger had forever disappeared. The matter was placed in the hands of the police and so faded forever from the minds of the public just as the diamond thief had disappeared from Mr. Murphy's view.

On the first of the current month an actress called Bessie Montour, leading lady in a company of "barn stormers" in this city, complained to the chief of police that she had been despoiled of her diamonds, worth not less than \$1,500. She said she had left them in the dressing or toilet room of a Cincinnati photograph gallery where she had gone for her likeness and had not thought of them until an hour or more had elapsed after she had bidden the photographer good-bye. A return to the gallery resulted in the discovery that the "valuables" were no longer where she had left them. A few moments later a lady walked into the chief's office and held out to him a chamois-skin bag saying: "I found this on the street. It contains some jewelry, some beautiful diamonds. I wish you would see to it that I am properly rewarded for restoring it to the owner. The chief examined the contents of the bag and found just what he expected, a lot of imitation stuff which an expert jeweler soon after pronounced worth altogether about \$25. It was the property of the actress, the identical \$1,500 diamonds she had lost and it was all restored to her. Thus did another effort of an actress to secure a lot of free advertising over the loss of valuable diamonds prove a failure, and thus did she provoke ridicule where she hoped to excite sympathy.

The jewelry of the notorious New York penny-weighters, Mary Smith and Lizzie Maguire, who carried off nearly a thousand dollars' worth of valuables from Clemens Hellebush's establishment a few months ago was sold at auction by the sheriff this week. There was fully a thousand dollars' worth of it, consisting of diamonds, locketts, etc., and it fetched only \$511.

Mr. John Holland was yesterday the recipient of a cablegram announcing that he had been awarded the gold medal for his fountain pen at the Anglo-Danish Exhibition.

The Jewelers' Security Alliance.

President, DAVID C. DODD, JR.

First Vice-President, AUGUSTUS K. SLOAN.....Of Carter, Sloan & Co.
Second Vice-President, HENRY HAYES.....Of Wheeler, Parsons & Hayes.
Third Vice-President, DAVID UNTERMAYER.....Of Keller & Untermeyer.
Treasurer, W. C. KIMBALL.....Of Strange & Brother.
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F. KROEBER.....Of F. Kroeber Clock Co.
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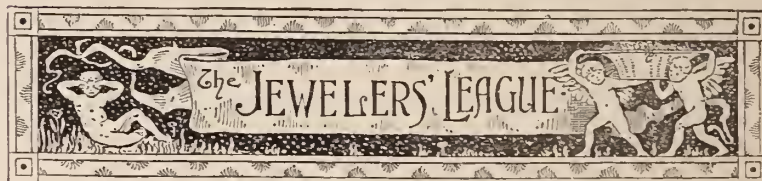
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A. JORALEMON.....Of A. Joralemon & Co.

For further information, Application Blanks for Membership, By-Laws, etc., Address
P. O. Box 3277. 170 Broadway, New York.

The regular monthly meeting of the Executive Committee was held at the Alliance office on Friday, the 14th inst. There were present A. K. Sloan, Vice-President, J. B. Bowden, Chairman, and Messrs. White, Kroeber, Lewis and Stuart.

The following were admitted to membership: Martin Zinner, 488 Grove street, Jersey City, N. J.; Fred Funke, 1202 Main street, Kansas City, Mo.; William Williams, 121 South Halsted street, Chicago, Ill.; also on Aug. 15th, W. L. Richards, Mechanic Falls, Me.



President, HENRY HAYES.....Of Wheeler, Parsons & Hayes.
First Vice-President, JOSEPH B. BOWDEN.....Of J. B. Bowden & Co.
Second Vice-President, CHARLES G. LEWIS.....Of Randel, Baremore & Billings.
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EXECUTIVE COMMITTEE.

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A. A. JEANNOT.....Of Jeannot & Sheibler.
GEORGE R. HOWE.....Of Carter, Sloan & Co.
WM. BARDEL.....Of Heller & Bardel.
J. R. GREASON.....Of J. R. Greason & Co.

THE JEWELERS' CIRCULAR is the official paper of the Jewelers' League and has been selected for the publication of all matters of interest pertaining thereto. Letters or inquiries pertinent to its business or purposes, and which might interest the trade or inquirers, will herein be answered. Address *Jewelers' League*, Box 3,444, P. O., New York, or the office of THE CIRCULAR.

At the regular monthly meeting of the Executive Committee of the League, held on Friday, Sept. 7th, 1888, there were present Vice-President Lewis and Messrs. Howe, Bardel, Greason, Jeannot and Sexton.

Three requests for changes of beneficiaries were granted, two applications were referred for investigation, and the following applicants were accepted:

Geo. L. Paine, N. Attleboro, Mass., proposed by C. W. Fisher;
J. G. Rennard, Phoenixville, Pa., proposed by Francis Pritty;
Henry Tissot, Brooklyn, N. Y., proposed by W. W. Trotter; Geo. Zimmerman, Selma, Ala., proposed by L. Schweizer.



The following list of patents is compiled from the records of the United States Patent Office, and specially reported to THE JEWELERS' CIRCULAR.

Issue of August 28, 1888.

- 388,402—Button. Ezra S. Dodge, Providence, R. I.
 388,404—Setting Mechanism for Watches. August Fisher, Winchester, Ill.
 388,545—Nose Guard for Eye-Glasses. George H. Emerson, Bucksport, Me.
 388,573—Jewelers' Lathe Chuck. Horace N. Mosely, Elgin, Ill.
 388,622—Electric Motor for Self-Winding Clocks. Frank W. Brainerd, Chicago, Ill.
 388,625—Canon Pinion for Watches. Leonard C. Briggs, East Saginaw, Mich.
 388,648—Stem Winding Watch. Silas A. Durgin, Sheldon, Dak.

Issue of September 4, 1888.

- 15,834—TRADE MARK for certain Ornamental Jewelry. Henry C. Luther, Providence, R. I. "The words 'Gilt Edge,'"
 388,947—Musical Box. Jean Billon-Haller, Geneva, Switzerland.
 389,012—Tool Rest for Hand Lathes. Edward Rivett, Boston, Mass.
 389,042—Button. John U. Adams, New Orleans, La.
 389,111—Self-Setting Timepiece. Albert Rosenbaum, New York, N. Y.
 389,120—Alarm Clock Case. David B. Tiffany, Xenia, Ohio.

Issue of September 11, 1888.

- 18,601—DESIGN for Jewelry. Steven M. Griswold, Brooklyn, N. Y.
 18,605—DESIGN for Clock Case. Leonard Krower, New Orleans, La.
 18,608—DESIGN for Watch Case. Fred. Parker, Jersey City, N. J., Assignor of one-half to Harry Parker, same place.
 389,194—Opera Glass Holder. Adolph W. Buchbinder, Jr., Detroit, Mich.
 389,446—Inlaid Jewelry. Matyas Cziner and Rudolph Brettner, New York, N. Y.

Issue of September 18, 1888.

- 389,663—Canon Pinion for Watches. Herman E. Murdock, Waltham, Mass., Assignor of one-half to Samuel A. Christie, same place.
 389,778—Interchangeable Initial Ring. Otto Thie and Charles M. Levy, New York, N. Y.
 389,830—Ear Wire. Barton A. Ballou, Providence, R. I.
 389,852—Clock. Edward M. Moulton and Mark Moulton, Rochester, N. Y.; said Mark Moulton Assignor to said Edward M. Moulton.



[FROM OUR SPECIAL CORRESPONDENT.]

ATTLEBORO, Sept. 18, 1888.

I am very thankful that some years ago I did not yield to the persuasion of some of my friends and devote my time to the learning of the "jewelry business," and it is safe to say that in the region which may be designated under the head of "The Attleboros," there are many more who wish they were less acquainted with the business. There was a time when a good jeweler could easily make \$4 per day,

but, alas, that time is in the far distant past, and the chances of its ever returning are slim indeed. The trade in this section appears to be very flighty. One week orders will come in which must be executed at once, thus compelling the manufacturer to run nights, and the next week the employees are lucky if they get in forty hours. The call for the campaign buttons is, of course, about over, at least on what may be called the regular styles; but now and then some new novelty is thrown on the market, catches the popular taste, and for a few weeks the originator is very busy; then something else is shown and that is boomed. A few of the firms are very busy, but this is the exception rather than the rule.

ATTLEBORO.

This, the largest town between Boston and Pawtucket, is generally looked upon as a political center, and the manufacturing jewelers, as the campaign opens, generally take important parts in the contest. At the recent Republican State Convention Mr. M. O. Wheaton, of the firm of Wheaton & Richards, was made one of the vice-presidents of the convention.

Another politician among the jewelers, although of a different party, is Mr. John M. Fisher, of J. M. Fisher & Co., manufacturers of charms. Mr. Fisher has for a number of years been very prominent in the councils of the third party in the State of Massachusetts, and at the recent State Convention of his party held in Springfield, he was the nominee for Treasurer and Receiver-General.

Mr. E. S. Horton, of the firm of Horton, Angell & Co., is a prominent member of Thos. A. Streeter Post 145, G. A. R., and he attended the annual re-union of the Grand Army held in Columbus, Ohio.

Mr. Win. M. Fisher is a jeweler doing business in Providence, but he lives in this place. He is also a prominent member of the Attleboro Agricultural Association, and for the past week he has been kept very busy.

Mr. J. M. Bates, of Bates & Bacon, watch case manufacturers, opened for the third season his elegant theatre, known as Bates' Opera House, a few nights ago.

NORTH ATTLEBORO.

This is the town which evidently has a grand future before it. The new railroad giving direct communication with Boston and New York is surely going through. Mr. Theron J. Smith, of the firm of T. J. Smith & Co., is a man who generally carries out any plan which he undertakes. He is really at the head of this movement, and the indications now point to an almost certain railroad, and that not very far distant either.

Mr. E. I. Franklin, of E. I. Franklin & Co., is a young man with a large amount of push, and to him has been left the arrangements for the trotting and games at the Agricultural Fair which begins Tuesday of this week.

E. F. Whitney & Co., of this place, have got one of the largest orders for campaign pins I have yet heard of. The pin is a most novel arrangement and the badge is known as the "He's all right" badge. It consists of a pin which is made on the same principal as a curtain roll. The badge proper is a silk ribbon attached to the roll, and when wound up all that can be seen is the lower end of the ribbon with the words "He's all right." The most natural question would, of course, be who's all right? This is answered by the owner pulling out the ribbon, and the name Harrison or Cleveland, according to the political tendencies of the wearer, is revealed. The first order was for 500 gross, and I hear that another order will follow this.

The suit in the September term of the Superior Court at Taunton, known as the Cheever vs. Sweet case, attracted a great deal of attention. The case was brought by Mr. E. L. Cheever, of North Attleboro, who charged Mr. J. L. Sweet and others of having maliciously prosecuted him a short time ago. The plaintiff employed as counsel James Brown, Esq., of Taunton, one of the best lawyers of the

Bristol bar, and Judge E. M. Reed, of Mansfield. The defendants' counsel were Hon. A. A. Raney, Esq., of Boston, James Morton, Esq., of Fall River, and G. A. Adams, Esq., of Attleboro. It was a splendid array of talent and both sides made a brilliant fight. It was finally decided by the court ordering the jury to bring in a verdict for the defendant.

For the first time in many years the jewelers have made a splendid showing in the annual fair of the Attleboro Agricultural Association, which opened Tuesday, September 18, and continued four days. In the upper part of the main hall the management reserved a large space for this exhibit and it was well occupied. This showing of the products of Attleboro's chief industry was one of the principal features of the fair and attracted universal attention. The following are the firms who were represented: From Attleboro—E. A. Potter & Co., bar pins, charms and buttons; E. A. Robinson, brooches; Tappan, Berry & Co., bracelets, drops, ladies' cuff buttons and lace pins; F. H. Saddler & Co., lace, bar and scarf pins; J. M. Fisher & Co., charms and novelties; S. W. Gould, large display of lace pins; Horton, Angell & Co., cuff and collar buttons beautifully arranged in cases lined with dark plush; Hayward & Sweet, bracelets; Wheaton, Richards & Co., collar and cuff buttons; Cummings & Wexel, collar buttons; F. W. Weaver & Co., lace, bar and scarf pins; R. B. Macdonald, lace pins and charms; Watson & Newell, one large case of collar buttons; W. H. Wilmarth, a large standard in a glass case, from which were hung a fine display of chains, charms, drops and pins; Short, Nerney & Co., a large exhibit of chains. From Attleboro Falls—Mason, Draper & Co., bracelets, pins and drops; E. Whitney, ladies' pins and novelties; Stanley Bros., chains; W. D. Fisher & Co., springs, swivels, chain bars and eye-glass chains. From North Attleboro—G. K. Webster, very fine display of pearl novelties; E. I. Franklin & Co., lace, scarf and brooch pins, bracelets, buttons and novelties; F. M. Whiting, handsome show of silver goods in cases; F. S. Gilbert, lace and bar pins; T. J. Smith & Co., buttons, lace pins and drops; Sandland, Capron & Co., bracelets, pins and drops. From Plainville—Wade, Davis & Co., bracelets, pins, cuff buttons, drops and chains; Lincoln, Bacon & Co., chains, lace pins and bracelets. The designs were very handsome to most of the visitors, but the initiated saw at a glance that all had refrained from showing any patterns which could in any sense be termed new. This fact showed a woeful lack of confidence on the part of the manufacturers which in many cases was, no doubt, well deserved.

MENDON.



[FROM OUR SPECIAL CORRESPONDENT.]

The International Exhibition at Glasgow.

LONDON, September 13, 1888.

It will be impossible to give any proper account of the jewelry at the Glasgow Exhibition without some reference to the Jubilee presents that are now on view there, so I will mention this very interesting and unique collection at the outset. The first impression one receives from a general contemplation of those presents is calculated to fix on one's mind the vast extent of the empire over which our Queen and Empress reigns. The mere statement that Her Majesty received presents from all parts of the world may mean much, but the statement itself is not nearly so impressive as a sight of the presents, indicating as it does most vividly a variety of people and places that could hardly be realized without such ocular assistance. These

gifts have come from places the most barren and sterile, and from others the most fruitful and luxurious. They are of every class, every form, every size. They include the gorgeous, costly tributes from the Princes of India and the simple, homely offerings of rural districts. They have almost defied classification by those who have had ample time to do it; they quite defy accurate description in this form. That the jewelry trade should be very largely represented in such a collection is just what would be expected. But there are rich and costly gifts in which gold and silver and precious stones have no place. Prominent among these is the beautiful donation from the Queen of Hawaii. This is an ornament which it is said has no fellow. I believe it is the work of the royal donor herself. It has the royal monogram, V. R., in the center, formed of beautiful red feathers and surrounded by a wreath composed of yellow and green feathers. The yellow feathers are held in high esteem in Hawaii; they are taken from the Royal Bird, the Oo. Till the present application of them these feathers have only been used for the Sovereign's state clock. The difficulty in procuring the enormous number required can only be appreciated when it is remembered that the birds from which they are taken are black and possess only one yellow feather under each wing. Though not so rare as the yellow feathers, the green and red ones are from birds whose plumage is used only by royalty. What gold or silver ornament, however rich, could compare in significance with such a gift, the feathers of which must have taken years to collect and many months to arrange? As these gifts have been on view before, your readers have doubtless already read full descriptions of them; I shall not, therefore, attempt even a summary of the wonderful specimens of the jeweler's art in almost every variety of design, but I cannot resist a passing allusion to the most remarkable assortment of caskets. Surely such a collection of "cases for addresses" was never before seen. I have more than once heard the remark that it was not an easy matter to produce an original casket, but here we have originality in size at least, for there are some specimens that stand five feet in height. One of these caskets represents a fish, the scales being produced by rough embossing. Another is a miniature modern lighthouse. A casket from one of the districts of Bijapur represents an Indian temple, while one from Allahabad is a representation of an Indian palanquin. The Nauab of Radhanpur has forwarded a filigree casket in the shape of a silver heart, and the Governor of Gold Coast Colony sends a beautifully finished casket made of West African gold nuggets and dust. If I once commence to talk of the jewelry gifts I shall run to too great a length and shall be sure to say imperfectly what has been said well and often, so I will leave the Jubilee presents and say a little about the general display of jewelry in the Exhibition. On one of the ordinary stalls—that belonging to G. Edward & Son, of Glasgow—is a very good collection of jewelry, trophies, swords, etc., etc.; also clocks and watches. They also exhibit some interesting presentation articles amongst which I notice a beautiful casket which is to be presented to Stanley on his return, and some boxes given to the Prince of Wales at different times. There is also a remarkable timepiece with thirteen dials indicating the time at different important cities on the globe. Edward & Son show one of the smallest watches ever made; the whole is fixed in the center of a diamond ring.

Mr. David MacGregor, of Perth, has a striking display of fine art engraved work on gold and silver, designed and executed by himself. One of the best examples of his work here is an excellent likeness of the Princess of Wales, on gold set with pearls. There are some good specimens of Scottish pearl and cairngorm jewelry. The process of manufacture is shown and explained.

Thomas Smith & Sons, Glasgow, have employees at work at their stand on which are shown some good specimens of silver and plated ware. Amongst their exhibits is the silver spade used by the Lord Provost, Sir James King, in cutting the first sod in the Exhibition grounds. There are many interesting exhibits from London, Liverpool, Dublin, Manchester, and other places. I stayed longer at the

Scottish stands because I had not had a previous opportunity of seeing their productions, and also because it is not so likely that the Glasgow and Edinburgh firms will exhibit elsewhere. I must, however, say something about the exhibit of a firm as well known to your readers as to me—the world-famed Elkington & Co., of Birmingham. Their stand forms an inner court with outer cases; the court is embellished with very handsome plaques. Fine samples of their work are shown in silver with golden ornamentation and enameled painted views. A great specialty of this firm has always been the production of presentation articles; it is, therefore, in keeping with their acknowledged reputation that they should make a good display in this class of goods. Amongst other things they show a very handsome silver dinner and dessert service, valued at 2,000 guineas, which will be presented to Colonel North by the Liverpool Nitrate Company. Many other presentation sets are shown, but I can only mention the silver dessert service presented to Sir James Ailport on his retiring from the management of the Midland Railway Company.

One of the most interesting sights to persons not connected with our trades is, I should think, the stand of the Diamond Cutting Company, of London. This stand is properly fitted up with all the mechanical appliances required in their business, so that they are able to show all the details of the cleaving, cutting and polishing of diamonds under the very eyes of visitors. The stall is a good attraction to those who like to look at precious stones, of which it contains a very great variety. There is a sketch of the beautiful "Diamond Butterfly" which was presented to the Princess of Wales by English Freemasons on the occasion of her Silver Wedding, and additional interest is imparted to it by the fact that the stones of which it is composed were cut and polished by the men at work at the stand. The official catalogue is worth a perusal by those deeply interested in our trades, although they may not have seen the Exhibition.

Space will not permit me to say more. It is an education in itself to visit such an exhibition, and I am satisfied that the more the public see of the really beautiful and artistic, the less will they indulge the vulgar taste for showy display manifested by wearing articles which, however expensive, have not any of the refining influences which are exerted by the smallest gem set with true artistic skill.

VIGILANT.

Obituary.

GORHAM THURBER.

The death of Gorham Thurber, on September 7th, removes another of the prominent men of the jewelry trade. Gorham Thurber was born in Providence in April, 1825, and during his entire life lived in that city. His father was Dexter Thurber, a well-known citizen and business man of the part known as North End. During his early youth Mr. Thurber was connected with the Franklin foundry as a clerk, and later, in 1850, went into partnership with his cousin John Gorham, as silversmiths, the Gorhams having been established since 1792. In 1865 the Gorham Manufacturing Company was established as the successor to Gorham & Co., which latter firm had succeeded Gorham & Thurber in 1852. Mr. Thurber occupied the position of treasurer, which he held until last July, when Mr. Holbrook succeeded him in that office. It was partly the efforts and wisdom of Gorham Thurber that made the Gorham Mfg. Co. what it is to-day, the foremost silverware house of the world. He cared for the finances of the house and to him partly belongs the credit of carrying the firm through the exigencies of several periods of panic and depressions in trade. The immediate cause of his death was a failure of the heart's action. Last July he made a trip to Europe and returned in August seemingly in the best of health. It was at a meeting of the stockholders of a cable railway company in which he was interested that he was suddenly prostrated by illness in the form

of collapse, with cessation of pulse. Dr. Gardner was summoned at once, and Mr. Thurber was removed to his home, but, although conscious to the last, the patient did not rally. The physician attributes his death primarily to indigestion, which caused a blood vessel to burst, a clot to form and be carried to the heart, resulting in stopping the heart's action. Mr. Thurber leaves a widow and five children, three sons and two daughters. Mrs. Thurber's maiden name was Miss L. L. Herbert, of Rowley, Mass. The sons and daughters are: William H. Thurber, of the firm of Tilden, Thurber & Co., of Providence; Dexter Thurber, of the house of Bradstreet, Thurber & Co., of Minneapolis; Edmund G. Thurber, New York City, Mrs. Charles H. Sprague, of Providence, who is the eldest of the two daughters, and Miss Alice Thurber. The deceased was a member of the Board of Trade and of the Commercial Club. The funeral was held on Monday, Sept. 10th, from his residence and was largely attended. The pall bearers were Messrs. Fred. I. Marcy, Gorham Pomeroy, George T. Paine and Charles H. George.

WILLIAM H. WELCH.

William H. Welch, of the firm of Spooner & Welch, one of the oldest jewelry establishments in Brooklyn, died on September 15th, at his home in that city, at the age of 65. Eight months ago he was stricken with an hemorrhage, but recovering gradually, the failing was entirely forgotten in his seemingly perfect health. But it is now thought he had a cancer on the heart, for his death occurred very suddenly, sickness attacking him Wednesday, and his death following the next Saturday. Mr. Welch was born in New York City in 1823, and two years later his parents removed to Brooklyn, where the family has ever since resided. At the age of 19 Mr. Welch was apprenticed to an engraver named White, on Broadway, who later removed to Providence, while Mr. Welch did a little business for himself at 17 John street, which he shortly afterwards abandoned and entered the employ of the old firm of Peckham, Merrill & Co., then at 13 John street. Here was also employed Mr. Spooner, and these two young men in 1850 left the employ of that firm and started in business in Brooklyn at 85 Myrtle avenue. Here they have been ever since, and in these many years have made an enviable name and reputation. The firm was familiar to all old Brooklynites and the members well-known for integrity and fair dealing. Mr. Welch has been popular, and inside as well as outside of the trade has had many friends. He leaves a wife and two sons, one of whom has been with Alling & Co. for some years.

The Inauguration of the Monument to Daniel Jean Richard.

[From the *Journal Suisse d'Horlogerie*.]



THE MONUMENT erected at Locle to Daniel Jean Richard was inaugurated Sunday, July 14, and the *fete* given on the occasion has been a success in every respect; even the sluice gates of heaven, which had been open during the month prior to the date, closed for the time. After a collation spread to the invited guests in the rooms of the Cercle Montagnard, a religious meeting was held at the French temple, at which a number attended; after music, a chant and a prayer, an appropriate discourse was delivered by the Rev. Mr. Comtesse.

At half-past one o'clock in the afternoon, a fairly large procession marched to the place of the festival; among the cantonal and local authorities were noticeable numerous delegations from other horological schools, delegates from Besançon, etc. The federal council was represented by Messrs. Droz and Schenk.

Our readers are acquainted with the details of the monument from

a description published in a previous number of this journal; they also know that the sculptor, Mr. Charles-Iguel, of Neuchâtel, but established at Geneva, has created a truly remarkable piece of work, and finally, that the monument was erected on the esplanade of the horological school. Upon the foot, simple but well proportioned, may be read the following inscription:

TO DANIEL JEAN RICHARD,
FOUNDER
OF
THE HOROLOGICAL INDUSTRY OF NEUCHÂTEL.

BORN AT LA SAGNE IN 1665,
ESTABLISHED AT LOCLE IN 1705.
DIED IN 1741.

After a patriotic tune, composed for the occasion and performed by three bands of music, and the song *Ranz des Vaches*, sung by the pupils of the primary schools, with orchestra and chimes accompaniment, the statue was unveiled by the sound of bells and thundering of cannons. Next Mr. Emil Tissot, member of the National Council, reviewed in an interesting discourse the useful life of Daniel Jean Richard; he recounted the history of the monument and horological industry of Neuchâtel, and finished by delivering the monument to the community of Locle, in the name of the committee on erection.

Mr. Aug. Dubois, President of the Communal Council of Locle,



MONUMENT ERECTED TO DANIEL JEAN RICHARD.

declared, in taking possession, that he would carefully guard its preservation.

After the singing of a cantata, composed in honor of D. Jean Richard, the Councillor of the State, Mr. Comtesse, pronounced an excellent discourse, in which he set up as example the life and deeds of Richard, as follows:

Let us bless, gentlemen, let us bless the hour ever memorable in our history, when this young blacksmith conceived the bold idea of constructing with his own hands this first watch of Neuchâtel, which was to become the starting point of our industrial activity, and let us admire, gentlemen, this youth who, without preparations, master or other guide, but endowed with that ardent faith which directs and sustains the seekers, engaged resolutely in this new pursuit, and succeeded in spite of a thousand obstacles, by the sole force of his conceptions and ceaseless labor, in sowing in the soil of our mountains the fertile glow of our great industry.

What troubles he encountered, or what difficulties he had to overcome in order to render himself master of his art and penetrate all its secrets, we do not know, nor does history tell us; but so much we do know that Richard did not permit himself to be overwhelmed or discouraged by the reverses and obstacles which he met with in his endeavors; it appears that his will was made of the metal of which he fashioned the different pieces of his watch, to resist all the trials to which he was subjected, and that he succeeded, after a long and laborious career, in the realization of his work.

One thing is certain, this man belonged to that race of investi-

gators who are the teachers of their own knowledge, the sons of their works, and who are content to work along in the long and laborious research of an idea whatever it be, and who find in it an intense zest and a secret satisfaction, which sustains them and redoubles their energy. It is certain that he pertained to that race of courageous inventors, who are neither cast down nor made faint by any untoward circumstance, and who, poor and stripped of everything, but animated by the holy flame of which is within them, forgetful of their fatigue and pain, follow to the end the painful road which conducts them to the desired goal, to that ideal of which they are in search.

Mr. Comtesse next appealed to the union of all those from Neuchâtel, both employers and employees, children of Chaux-de-Fonds and Locle, and terminated as follows:

What does this image of Daniel Jean Richard tell you? It speaks to you of your industry; be neither cast down nor discouraged, and when the clouds draw thickly about you, at each return of those industrial crucial tests of which you suffer sometimes so cruelly, gaze on this image; it will tell you that it was only by perseverance and energy that your forefathers conquered all obstacles and sustained prosperous their fortune and their industrial reputation. It will stimulate and steel your heart and courage at a moment of oscillation. It will stimulate among you the genius of invention, and will perhaps impart to you the secret of new works and of new and useful improvements in our industry.

Young men and children, whenever you pass by the statue of this young blacksmith, uncover yourselves, and let his memory accompany you into your rooms of study and think of it in your hours of work, which will animate in you an ambition to become in your turn useful workmen, which will excite you to valiant deeds, to manly resolutions, and to patriotic enterprises.

Daniel Jean Richard! I salute thee as one of the cherished glories of our small country! I salute this monument which has been erected by the affection of thy fellow-citizens.

That, protected by pious veneration, respected by time, it remain at this place, in this city of Locle, where your active life slowly passed away, under this heaven of our mountains, somewhat cold and often inclement, it be an energetic and salutary admonisher to the man of work. That your image, respected by the veneration of all, proclaim to future ages your life of work and honesty, and remain before our eyes as a glorious souvenir of the past, as an example strengthening us now, and speaking hopefully of the future!

The band played another piece of music, after which the Federal Councillor, Mr. Droz, pronounced the following discourse which we reproduce entire:

Dear fellow-citizens!—In the name of the Federal Council, and as a child of the mountains of Neuchâtel, I am proud to salute in my turn the statue of the man of genius to whom all the countries of Switzerland owe their prosperity. I am glad of the opportunity to participate in the tardy homage which we render him to-day. I am happy and proud to lay at the feet of this inventor with the pensive forehead, of this seeker, of this indefatigable improver, the last legislative work of the Confederation, the law on the patents of invention, which finally recognizes, and guarantees, the fruits of labor to the industrial genius.

Is it not, indeed, a happy coincidence, that you are all able to inaugurate, as it were, these two monuments; the one of bronze, erected on this place in Locle—the common mother of the mountains, in front of this horological school, noted for its able masters and the distinguished pupils which it has produced;—the other simply written, or, better said, engraved, upon the tablet of the laws of the Confederation? Can one characterize better than by this statue and by this law, the present tendency of our people which (its political strife being happily over) now turns its attention and activity to the solution of industrial and social problems?

As regards Daniel Jean Richard, when, during the long evenings in winter, he taught to his family and apprentices the art which he himself created by force of studies and researches—did he ever dream that the day would come when thousands upon thousands of families would live from his industrial enterprise? Did he foresee in his dreams of the future, that, thanks to him, populous villages with comfortable dwellings would spring up as if by enchantment upon this arid Jura, which until then every one believed to be suited only to the pastoral and woodman's industry? That in each of these dwellings, father, mother, boys and girls, would find lucrative occupation in the manifold labor of the manufacture of the watch?—that numerous factories and workshops would arise, and that by the division of work, and by the use of constantly improved machinery, our

power of production would grow at a most astonishing rate? That two centuries after the first watch issued from his hands, the annual production would be more than five millions of watches, representing a value of at least one hundred millions of francs? That the consumption of the precious metals, serving as an envelope to the movements, alone, amount to forty or fifty millions? That at all points of the globe counting houses would be established for the sale of this Swiss watch which, in spite of the competition which has sprung up, remains incontestably the mistress of the market,—the watch which indicates the time to nearly all the inhabitants of the earth? Did he foresee that an entire people would unite to do honor to his image, and to celebrate the memory of the young blacksmith who had become the father of watchmaking—the benefactor of his country?

No, doubtless not; modest workman of the mountain as he was, his ambition was only that of the creative genius which finds the greatest satisfaction the most cherished recompense in the realization of its conception.

But the work of genius is like those winged seeds which the wind transports whither it listeth, and which results often when least expected in glorious harvests; we have these abundant harvests before us; the field is growing larger every day, but in common with the cultivator of the soil, we have to take into account the dangers which threaten it. Leaven is not equally propitious every year, the winter, the season of rest, is sometimes prolonged in a desperate manner; often the spring and summer, in place of being laden with hope and heat, bear nothing but misfortune and reverses, rapacious birds circle around the field to rob it of the seeds; the hail of failures and bankruptcies batters down a smaller or larger extent of the harvest, and when, in the fall, after having stored the remainder in the barn, one believes it to be sheltered against the storm of vicissitudes, unhappy speculation diminishes it and contributes to the loss of the profit. But in spite of all, the vitality of the seed and the fertility of the field remain; the partial disasters which lay low our hopes and carry grief to our hearts must never be strong enough to blast our faith in the future; they must only stimulate us to renewed endeavors, by measures of greater care, to shove in the rich patrimony which we possess in common.

Yes, dear fellow citizens, let us unite more closely than we have hitherto done; let us try to substantiate all the honest interests, in order to eliminate more easily all the impure elements so fatal to our prosperity. The industrial and commercial individualism is only a useful force when it marches in agreement with the general interest. To the laws of morality and progress, which are called law of the control, law on the commerce of wasage, law on the trade marks, law on professional instruction, law on patents of invention, and which will soon be called law on the models and industrial designs, law concerning debts and failures, law on brokerage in horology, let us try to add by the fertile way of private enterprise, the professional syndicates, the societies on the surveillance of credit, all the groupments of forces which are for the purpose, and which should have, as result of regulating business affairs, the protection of industry against the *chevaliers d'industrie* (pirates), the pacification of the disputes between workmen and manufacturers.

Then the greater part of the crisis due to improvidence and fear, not to say, disloyalty in affairs, will cease. Then will spring up in every heart those sentiments of confidence and security, which constitute the strength and happiness of a people.

Fellow-citizens! At the foot of this statue, where is found re-united the large horological family, the progenitor of which is Jean Richard, I express the ardent wish that our cherished Swiss national industries may, in the midst of peace both without and within, develop unceasingly and prosper for the good of the fatherland, following this triple device which may always be ours, perfection, devotion, union!

These eloquent words were loudly applauded as were also those of the previous orators.

The rendition of the Swiss national hymn by the bands, singing clubs and those present, concluded the festivities.

A remarkable historical procession, devised by Mr. A. Bachelin, next passed through the town. It represented scenes from the local history of Locle.

Behind the van-guard and the commander of the procession, came Jehan Droz and his sons, who, in the fourteenth century, cleared the first ground in the valley, and may be considered as the founders of Locle; next, the magistrates, accompanied by cavaliers and men-at-arms, bearing the letter of franchise granted in 1372 by the Seigneur de Valengin to his subjects of Locle and La Sagne; the women of the Cret. Vaillante (1476) with the bull of the Bourignons; Guille-

mette de Vergy (sixteenth century) with her ladies of honor, pages and cavaliers; the hero of the day and his daughters (eighteenth century); Mgr. de Béville (1786) in a carriage of the time, drawn by four horses, with a large suite; the chariot of the lace makers (nineteenth century); the shooters of Locle of 1840; the allegorical chariot of Locle, etc. Several of these groups were justly applauded. The procession comprised in all about 300 persons, of which 50 or 60 were mounted.

Similar to every festivity, it ended in an enjoyable banquet at the Cercle de l'Union Républicaine. New discourses were pronounced by Messrs. Perrenoud, Richard, Jeanhenry, Jurgensen, Grether, Pancey, and Sandoz (de Besançon), Steiger, Klein, Viequerat, Viguier, etc. A large concourse of people filled the streets, admiring the illumination, the procession with torchlights and pyrotechnics.

We extend our felicitations to the organizers of this handsome manifestation; it will long be remembered by those who had the pleasure of taking part in it.



[FROM OUR SPECIAL CORRESPONDENT.]

BUFFALO.

One would naturally believe, with nightly illuminations of the principal streets, a state fair, a democratic convention, horse races, bench show, and state league base-ball games for the past ten days, that the business of Buffalo, N. Y., would be booming. But the jewelry trade does not seem to enthuse much over it.

T. & E. Dickinson have done a good trade, but think it is with their regular customers and very little with the visitors. They have entirely recovered from the damage of their late fire, and have their store handsomely refurnished and thoroughly stocked in all departments.

Edwards & Lee are well pleased with their summer business and speak very encouragingly of their fall trade. They make a very attractive display in their large window, which is changed daily, and which brings them in considerable business.

Mr. T. C. Fauke speaks well of his trade, as does Mr. T. V. Dickinson who is satisfied with his new location, and believes it is going to be a great success.

DETROIT.

At Detroit, all the retail jewelers have done a fair summer business, and the display of foreign goods arriving daily for M. S. Smith & Co., and Wright, Kay & Co., leads one to believe that there is to be some business done in those goods. Both these houses have imported large lines of Russian silverware, and are making very handsome displays. These lines are composed of both hollow and flat ware, solid silver, gilded mostly, and enameled with bright colors, and are more costly than our home productions.

Mr. Wright returned from Europe early in August, and Mr. F. G. Smith returns about the middle of September. Mr. Chas. H. Morrison, buyer for the jewelry department of M. S. Smith & Co., is away on his vacation, and returns about Sept. 23d. Mr. J. H. Taylor, who has been in the diamond department for M. S. Smith & Co. for some time past, has returned east, and desires to re-establish himself in New York City.

Mr. W. G. Hamburg, watch salesman for Wright, Kay & Co., has just returned from a two weeks' sojourn in the east. Mr. Roehm, of Roehm & Son, reports a satisfactory summer's business. He, with the assistance of his two sons, have run their business since Mr. H

R. Hukins left. There seems to be a demand for first-class retail jewelry salesmen, and I do not know of any city in the country that needs a few more than the city of Detroit. Mr. Chas. Roe, who has had charge of the plated ware department for M. S. Smith & Co., for a number of years past, is soon to retire, and is going into the hotel business. He being a very popular fellow, is bound to succeed in this new enterprise.

CHICAGO.

Mr. Eugene Coppel, of Giles Bros. & Co., of Chicago, was called to St. Louis on the 11th inst., on account of the serious illness of his father, who was a retail jeweler of St. Louis for many years.

Mr. Wells Isbell, who for some time past has been with Myers & Co., of St. Paul, as salesman, is soon to accept a position with Giles, Bros. & Co., of Chicago, so report says.

Mr. Carl Groff, of Mayo, Groff & Co., Chicago, has gone to Mount Clements, Mich., to take a course of treatment for rheumatism, and expects to return to business about Oct. 1st.

Since the failure of N. Matson & Co., of Chicago, Mr. C. D. Peacock has made an effort to take the head as the retail jeweler of Chicago, and from the completeness of his stock in the different departments of his beautiful store, and the thorough system employed in the management of this business. He will prove a very interesting competitor for the balance of the trade.

The large dry goods establishment of Marshall, Field & Co., Chicago, has leased another large store at the north side of their immense retail establishment, which faces on State street, and are to devote a greater part of it to the sale of jewelry, both plated and gold. They already employ one traveler who carries three large trunks of jewelry, all through the west and northwest.

CINCINNATI.

Like Buffalo, Cincinnati's centennial has not benefitted the retail jewelry business much. Saturday, September 15th, was set aside as *Drummer's day*, and all the wholesale trade of the city was expected to suspend business for that day.

The people here seem to be pleased to know that the large and long established house of Duhme & Co. is to be continued the same as it was previous to the death of its founder, Mr. Duhme, as Mr. Galbreath and the heirs have issued a circular to that effect.

PITTSBURGH.

The sympathy of the trade at Pittsburgh is with Mr. Steele Roberts, of E. P. Roberts & Sons, in the loss of his baby daughter, two years old, which died on the 8th inst.

Mr. Harry Wattles, of Mr. W. W. Wattles, having returned from Europe, is now quite busy displaying his new foreign purchases. They have made handsome art rooms on the second and third floors of their store, and they have a beautiful display of rich and rare pottery, bronzes and fancy goods.

Mr. Warren Wattles, of Wattles & Sheaffer, left for New York September 15th in search of fancy goods.

There are to be several changes in business locations made in the spring by some of the leading jewelers of Pittsburgh, and it is safe to say that these new stores will be made very attractive in the way of fixtures.

CLEVELAND.

At Cleveland, the new store of C. F. & L. Uhl is finely located at No. 1 Euclid avenue. It is handsomely fitted up and well stocked. They report a fair trade.

Mr. I. H. Cowell, of the firm of Cowell & Hubbard, of Cleveland, O., returned home from Europe, September 14th, where he has been for the past four months, trying to regain his health which was very much impaired on his departure. His many friends will be pleased to know that he is very much improved and has every hope of an ultimate recovery in the near future. Mr. Hubbard has been in New York for past week for new goods and they report a good summer business.

HARD SOLDER.

Use of Gold and other Metals in Ancient Chiriqui.

BY WILLIAM H. HOLMES.*



UNTIL comparatively recent times the province of Chiriqui has remained almost unknown to the world at large. The Isthmus was traversed a number of times by the conquerors, who published accounts of their discoveries, but it was reserved for the period of railroad and canal explorations to give trustworthy accounts of its character and inhabitants.

The situation of Chiriqui is unique. Forming, politically, a part of South America, it belongs in reality to the North American continent. It occupies a part of the great southern flexure of the Isthmus at a point where the shore lines begin finally to turn toward the north. Costa Rica lies to

the west and the province of Veragua bounds it upon the east.

The antiquarian literature of the province is extremely limited, being confined to brief sketches, based for the most part upon the testimony of transient visitors, gold hunters, and Government explorers, who took but little note of the unpretentious relics of past ages. As there are few striking monuments, the attention of archaeologists was not called to the primeval history of man in this region, and until recently the Isthmus was supposed to have remained practically unoccupied by that group of cultured nations whose works in Peru and Mexico excite the wonder of the world. But, little by little, it has come out that at some period of the past the province was thickly populated and by races possessed of no mean culture. One of the most important additions to our knowledge of the province and its archaeological treasures is furnished in the manuscript notes of Mr. J. A. McNeil, who made the greater part of the collection now deposited in the National Museum. This explorer has personally supervised the examination of many thousands of graves and has forwarded the bulk of his collections to the United States. His explorations have occupied a number of years, during which time he has undergone much privation and has displayed much enthusiasm in pursuing the rather thorny pathway of scientific research.

At the present time this district is inhabited chiefly by Indians and natives of mixed blood, who carry on grazing and agriculture to a limited extent, but subsist largely upon the natural products of the country. These people are generally thought to have no knowledge or trustworthy tradition of the ancient inhabitants, and are said to care nothing for the curious cemeteries among which they dwell, excepting as a source of revenue. Mr. A. L. Pinart states, however, that certain tribes on both sides of the continental divide have traditions pointing toward the ancient grave builders as their ancestors.

There is probably no valid reason for assigning the remains of this region to a very high antiquity. The highest stage of culture here may have been either earlier or later than the period of highest civilization in Mexico and South America or contemporaneous with it. As to the affinities of the ancient middle Isthmian tribes with the peoples north and south of them we can learn nothing positive from the evidences of their art. So far as the art of pottery has come within my observation, it appears to indicate a somewhat closer relationship with the ancient Costa Rican peoples than with those of continental South America; yet in their burial customs, and especially in their use of gold, they were like the ancient peoples of Middle and Southern New Grenada.

*The right to reprint this article has been kindly given us by Dr. W. H. Holmes of the Bureau of Ethnology, Washington, D. C.

The ancient cemeteries, or *huacas*, as they are called throughout Spanish America, are scattered over the greater part of the Pacific slope of Chiriquí. It is said by some that they are rarely found in the immediate vicinity of the sea, but they occur elsewhere, in the river valleys, on the hills, the plateaus, the mountains, and in the deepest forests. They are very numerous, but generally of small extent. The largest described is said to cover an area of about twelve acres. They were probably located in the immediate vicinity of villages and towns, traces of which, however, are not described by explorers. There can be no doubt that diligent search will bring to light the sites of dwellings and towns. One of the most circumstantial accounts of these burial places is given by Mr. Merritt, who was also the first to make them known to science. Mr. Merritt was director of a gold mine in Veragua, and in the summer of 1859 spent several weeks in exploring the graves of Chiriquí; he therefore speaks from personal knowledge. In the autumn of 1858 two native

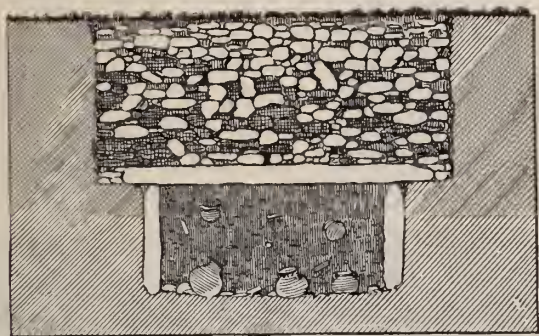


Fig. 1. Section of an ordinary grave, showing the surface pack of river stones and the positions of the slabs and objects of art.

farmers of the parish of Bugaba, or Bugava, discovered a golden image that had been exposed by the uprooting of a plant. They proceeded secretly to explore the graves, the existence of which had been known for years. In the following spring their operations became known to the people, and within a month more than a thousand persons were engaged in working these extraordinary gold mines. The fortunate discoverers succeeded in collecting about a hundred and thirty pounds' weight of gold figures, most of which were more or less alloyed with copper. It is estimated that fifty thousand dollars' worth in all were collected from this cemetery, which embraced an area of twelve acres.

Although there are rarely surface indications to mark the position of the graves, long experience has rendered it comparatively easy to discover them. The grave hunter carries a light iron rod, which he runs into the ground, and thus, if any hard substance is present, discovers the existence of a burial. It is mentioned by one or two writers that the graves are in many cases marked by stones, either loose or set in the ground in rectangular and circular arrangements. The graves do not often seem to have had a uniform position in relation to one another or to the points of the compass. In some cases they are clustered about a central tomb, and then assume a somewhat radiate arrangement; again, according to Mr. McNeil, they were placed end to end, occupying long trenches. He describes the pits as being oval and quadrangular and as having a depth ranging from a few feet to eighteen feet. The paving or pack consists of earth and water-worn stones; the latter are pitched in without order and form but a small percentage of the filling. He has never seen such stones used for facing up the walls of the pit or in the construction of pillars. The flat stones which cover the cyst are often ten or fifteen feet below the surface, and are in some cases very heavy, weighing three hundred pounds or more. A single stone is in some cases large enough to cover the entire space, but more frequently two or more flat stones are laid side by side across the cavity. These are supported by river stones a foot or more in length, set around the margin of the cyst. He is of the opinion that both slabs and bowlders were in many cases carried long distances. None of the pits

examined were of the extraordinary forms described in detail by A. de Zeltner and others. The implements, pieces of pottery, and ornaments were probably buried with the dead, pretty much as are similar objects in all parts of America. The almost total disappearance of the human remains makes a determination of exact relative disposition impossible. The universal testimony however, is that all were not placed with the body, but that some were added as the graves were filled, being placed in crevices of the walls or pillars or thrown in upon the accumulating earth or pebbles of the surface pavement.

The relics obtained from the tombs are confined almost exclusively to the three least perishable materials: stone, clay and metal. The collections show a great preponderance of objects of clay, of which the National Museum now owns about four thousand pieces. Objects of stone are plentiful, comprising perhaps a tenth of the whole number of relics. Objects of metal are comparatively rare; they are described in detail in the following pages.

USE OF GOLD AND COPPER.

The Chiriquians, like many of their neighbors in the tropical portions of the American continent, were skilled in the working of metals. Gold, silver, copper and tin—the latter in alloys with copper forming bronze—are found in the graves. Gold is the most important and is associated with all the others in alloys or as a surface coating. The inhabitants of the Isthmus at the time of the discovery were rich in objects, chiefly ornaments, of this metal, and expeditions sent out under Balboa, Pizarro, and others, plundered the natives without mercy. When the Indian village of Darien was captured by Balboa (1510) he obtained "plates of gold, such as they hang on their breasts and other parts, and other things, all of them amounting to ten thousand pesos of fine gold."¹ From an expedition to Nicaragua, the same adventurers brought back to Panama the value of "112,524 pieces of eight in low gold and 145 in pearls."² Early Spanish-American history abounds in stories of this class. Among others we read that Columbus found the natives along the Atlantic coast of Chiriquí and Veragua so rich in objects of gold that he named the district *Castillo del Oro*. It is said that the illusory stories of an *El Dorado* somewhere within the continent of South America arose from the lavish use of gold ornaments by the natives whom the Spaniards encountered, and Costa Rica gets its name from the same circumstance. It is also recorded that the natives of various parts of Central and South America, at the date of the conquest, were in the habit of opening ancient graves for the purpose of securing mortuary trinkets. The whites have followed their example with the greatest eagerness. As far back as 1642 the Spaniards passed a law claiming all the gold found in the burial



No. 2. Frog modeled in clay and used as a vase ornament.

places of Spanish America,³ the whole matter being treated merely as a means of revenue.

The objects of gold for which the tombs of Chiriquí are justly famous are generally believed to have been simple personal ornaments, the jewelry of the primeval inhabitants, although it is highly probable that many of the figures had, at least as originally employed, an

¹ Herrera, Hist. America, Vol. VI., p. 369.

² Herrera, Hist. America, Vol. III., p. 287.

³ Mr. Hawes's letter answering questions about Chiriquí, read by Mr. Davis before the Am. Eth. Soc., April 17, 1860.

emblematic meaning. They were, doubtless, at all times regarded as possessed of potent charms, and thus capable of protecting and forwarding the interests of the owners. They have been found in great numbers within the last twenty-five years. but for the most part, even at this late date, have been esteemed for their money value only. Very many specimens found their way to this country, where they were either sold for curiosities, or, after long waiting for a purchaser, even in the very shadow of our museums, were consigned to the furnace. Many stories bearing upon this point have been told me. A Washington jeweler is represented as having exhibited (about the year 1860) in his window on Pennsylvania avenue a remarkable series of these trinkets, most of which were afterwards sent to New York to be melted. About the same period a gentleman on entering a shop in San Francisco was accosted by a stranger who had his pockets well filled with these curious relics and wished to dispose of them for cash. A number of my acquaintances have neat but grotesque examples of these little images of gold attached to their watch guards, thus approving the tastes of our prehistoric countrymen and and at the same time demonstrating the identity of ideas of personal embellishment in all times and with all peoples.

The ornaments are found only in a small percentage of the graves, those probably of persons sufficiently opulent to possess them in life; the great majority of graves contain none whatever. They are often found at the bottom of the pits, and probably in nearly the position occupied by them while still attached to the persons of the dead. It is said that occasionally they are found in the niches at the sides of the graves, as if placed during the filling of the pit.

Strangely enough, the gold is very generally alloyed with copper, the composite metal ranging from pure gold to pure copper. A small percentage of silver is also present in some of the specimens examined, but this is probably a natural alloy. In a few cases very simple figures appear to have been shaped from nuggets or masses of the native metals: this, however, is not susceptible of proof. The work is very skilfully done, so that we find it difficult to ascertain the precise methods of manipulation. The general effect in the more pretentious pieces resembles that of our filigree work, in which the parts are produced by hammering and united by soldering; yet there are many evidences of casting, and these must be considered with care. As a rule simple figures and some portions of composite figures present very decided indications of having been cast in molds; yet no traces of these molds have come to light and there are none of those characteristic markings which result from the use of composite or "piece" molds. Wire was extensively used in the formation of details of anatomy and embellishment, and its presence does not at first seem compatible with ordinary castings. This wire, or pseudo-wire it may be, is generally about one twenty-fifth of an inch in diameter.

The manner in which the numerous parts or section of complex figures are joined together is both interesting and perplexing. Evidences of the use of solder have been looked for in vain, and if such a medium was ever used it was identical in kind with the body of the object or so small in quantity as to escape detection. At the junction of the parts there are often decided indications of hammering, or at least of the strong pressure of an implement; but in pursuing the matter further we find a singular perfection in the joining, which amounts to a coalescence of the metals of the two parts concerned. There is no weakness or tendency to part along the contact surfaces, neither is there anything like the parting of parallel wires in coils or where a series of wires is joined side by side and carried through various convolutions. In a number of cases I made sections of coils and parts composed of a number of wires, in the hope of discovering evidences of the individuality of the strands, but the metal in the section is always homogeneous, breaking with a rough granular fracture and not more readily along apparent lines of junction than across them; and further, in studying in detail the surface of parts unpolished or protected from wear by handling, we

find everywhere the granular and pitted unevenness characteristic of cast surfaces. This is true of the wire forms as well as of the massive parts, and in addition to this, such defects occur in the wires as would hardly be possible if they were of wrought gold.

All points considered, I am inclined to believe that the objects were cast, and cast in their entirety. It is plain, however, that the original model was made up of separately constructed parts of wire or wire-like strands and of eccentric and often rather massive parts, and that all were set together by the assistance of pressure, the indications being that the material used was sufficiently plastic to be worked after the manner of clay, dough or wax. In one case, for example, the body of a serpent, consisting of two wires neatly twisted together, is held in the hand of a grotesque figure. The hand consists of fingers made by doubling together two short pieces of wire. The coil has been laid across the hand and pressed down into it until half buried, and the ends of the fingers are drawn up around it without any indication of hammer strokes. Indeed, the effect is just such as would have been produced if the artist had worked in wax. Again, in the modeling of the eyes, we have a good illustration. The eye is a minute ball cleft across the entire diameter, by a sharp implement, thus giving the effect of the parted lids. Now, if the material had been gold or copper, as in the specimens, the ball would have been separated into two parts or hemispheres, which



Fig. 3. Grotesque anthropomorphic figures, used in a stool-like object of clay.

would not exhibit any great distortion, but as we see them here the parts are flattened and much drawn out by the pressure of the cutting edge, just as if the material had been decidedly plastic.

It seems to me that the processes of manufacture must have been analogous to those employed by the more primitive metal workers of our own day. In Oriental countries delicate objects of bronze and other metals are made as follows: A model is constructed in some such material as wax or resin, and over it are placed coatings of clay or other substance capable of standing great heat. These coatings, when sufficiently thickened and properly dried, form the mold from which the original model is extracted by means of heat. The fused metal is afterwards poured in. As a matter of course, both the mold and the model are destroyed in each case, and exact duplications are not to be expected. Mr. George F. Kunz, of New York, with whom I have discussed this matter, states that he has seen live objects, such as insects, used as models in this way. Being coated with washes of clay or like substance until well protected and then heavily covered, they were placed in the furnace. The animal matter was thus reduced to ashes and extracted through small openings made for the purpose. As bearing upon this subject it should be mentioned that occasionally small figures in a fine reddish resin are obtained from the graves of Chiriqui. They are identical in style of modeling with the objects of gold and copper obtained from the same source.



THE NEW BUILDING FOR JEWELERS' OFFICES, CORNER BROADWAY AND JOHN STREET.

The new building now being erected at the corner of Broadway and John street for Mr. Austin Corbin, is attracting the interest of the jewelry trade, from the fact that it has been announced that it was to be built especially for jewelers. We present herewith a sketch of a perspective of the building as it will appear when completed. The trade is to be congratulated that at last a beginning has been made towards providing it with suitable places in which to carry on its business, which, though a business devoted entirely to one of man's chiefest luxuries, has hitherto been carried on for half a century in a section of the city in which scarcely any improvements have come with the march of time.

The building is to be built with especial regard for the wants of our trade. It is, first, to be substantial, to hold the enormous

weight of safes which will be required in each office. The foundation and walls will therefore be thicker than would ordinarily be required, and it is calculated by the builder that no number of safes that can be used by the occupants of the building can possibly render it unsafe. Architectural beauty has also been considered, and a more handsome structure it will be hard to find on Broadway on any lot of the same size. The interior arrangements will be elegant as will appear in the description below.

It is expected that the seventy offices in the building will be rented before its completion, which may be expected next May, so great is the desire of the trade to have offices in this modern building. The plans are therefore in readiness and offices may be leased of Mr. Frank Burke, 155 Broadway, the agent of Mr. Corbin. The

Chatham National Bank has already secured the large banking house on the ground floor, with basement underneath.

The following description was furnished us by the architect, Mr. Francis H. Kimball of 40 Broadway, and we print it in full:

The building in course of construction, at the corner of Broadway and John street, for Austin Corbin, Esq., is to be a thoroughly fire-proof building, built of the best materials and fitted up in a complete manner equal to the best of the recent office buildings.

It is to be eight stories high, the first story arranged for a bank, running back from Broadway 126 feet; also a store at the extreme east end. The elevator entrance to the building is from John street, between the bank and store, and will be 10 feet wide, but there will be a Broadway entrance as well to the second floor.

Over the store is a mezzanine floor with two offices. Above the first story the arrangement is similar in each of the stories, and there will be altogether about 70 offices in the building. On the roof is the janitor's quarters, tanks for the elevators and plumbing works.

There are two stories underground, the basement proper to be used in connection with bank and store. In the sub-basement will be all the machinery—pumps for elevators, steam heating apparatus and boilers. The size of the lot is 20 feet on Broadway and 162.11 feet on John street, and 49 feet deep at the east end. The materials for the exterior is stone for three stories in height, the remaining height a light shade of red brick trimmed with terra cotta.

The stone work is treated in a simple manner, with carving introduced in special features. The effect of the stone will depend on the broad openings in first story with the massive piers supporting the floors, and in the coursing up of the stone work in the second and third stories, which consists of brown and red stone in alternate layers. In so narrow a front as that on Broadway, the only architectural composition which seemed consistent, was in the character of the windows and the grouping, with light projections of mouldings, leaving out of the question heavy cornices, and cumbersome features which would call attention to the narrowness of the front. A pavilion is retained on John street, similar to the Broadway front, and of the same width. At the extreme east end there is another pavilion of the same character. The long stretch of front between the two pavilions is relieved by the six large bays which extend up through three stories, from the fifth to the seventh story, these bays to be of highly ornamented metal work, and around the opening and arch will be ornamental terra cotta.

The height from sidewalk to top of roof parapet is 114 feet.

The wood-work of the interior in the offices will be of hardwoods of various kinds. The hallways throughout are to be paved with marble and mosaic, with marble wainscoting around the corridors and up the staircases.

The main staircase is to be of ornamental iron work treated with bronzes, the treads and platforms of slate, the first flight, probably of marble. All of the toilet rooms will be lined up with marble, and the plumber's fittings will be of the most approved kinds, and of a thoroughly substantial character.

All of the offices are to have steam heat, but in addition a fire place will be in every office in the building for ventilation and a light fire in the early part of the season.

It is the intention to have the building ready for occupancy by May 1st next.

Denver Letter.

DENVER, COLO., Sept. 19, 1888.

Denver presents a very animated appearance at the present time. Elegant blocks are being erected on all sides. Old buildings are fast giving way to more modern structures. Two lines of cable roads are nearly finished. The new capitol building is beginning to assume definite shape, and the population is being augmented daily by people from all parts of the country. The fame of Denver as a health resort is becoming widely known, and as a business and rail-

road center it is increasing rapidly in importance. The jewelers are preparing for a very prosperous season. The legislature convenes the coming winter, and it always brings a great many strangers as well as members and their families, who generally remain the entire season. Of course the jewelers are, generally, well patronized, and it is hoped that the coming season will prove no exception. Among the successful new ventures may be mentioned the establishment of A. F. Haberl, 1704 Lawrence street, who is well known here as a skilful lapidary. At the above location is the retail store in charge of the proprietor, who was, previous to coming to Denver, connected with Durand & Co., of Newark, N. J. The watch and watch repairing department is in charge of Mr. C. D. Ledger, a thoroughly practical watchmaker of many years' experience in the leading watch factories, notably the Elgin and Seth Thomas. At the latter factory he, assisted by Mr. H. A. T. Reinicke, of New York, designed and made the models for their successful watch movements. His motto is, to repair watches in a practical way, restoring them to their original condition, the same as they left the factory. The factory is located on Blake street, employing five hands, and is under the supervision of Mr. Paul A. Haberl, a practical lapidary, who will be remembered at the New Orleans exposition as in charge of the cutting of the petrified forest exhibit. The mountings and jewelry manufacturing are under the charge of Mr. I. Haberl, a veteran, well known in New York and Newark, for his connection with Durand & Co., and other firms. With a large circle of personal friends, and a trade extending all over Colorado, Wyoming, Utah and New Mexico, a large and constantly increasing patronage is confidently predicted.

H. S. Porteous, proprietor of the Diamond Palace in the Opera House block, is certainly original in his idea of locating his manufacturing department in the basement with windows opening on to the sidewalk directly under the front show windows, thereby giving passers by a full view of the mysteries of the work bench, showing the men at work with blowpipes, charcoal, etc., and the finished product in the windows above. It has never been considered the American idea that the beauty or selling powers of fine jewelry, were in any way enhanced by openly exhibiting the process of manufacture, as amongst the trade it is a well authenticated fact that the average jeweler's work bench is not an extreme model of cleanliness; as an advertisement, on account of its originality, it may prove profitable.

The establishment of Mrs. J. Rothgerber, under the able management of Mr. M. Benjamin, still retains its grip on the diamond and fine jewelry trade, and always makes a handsome window display. The loan business connected with this house is quite extensive.

In the optical line here, Mr. M. J. Mitchell, of Lawrence street, carries an extensive stock of field and opera glasses, mathematical instruments, and eye-glasses and spectacles, in addition to a nice assortment of watches and jewelry.

The veteran optician, Mr. A. Ward, who made spectacles for all the nobility in days gone by, in London, has recently taken more commodious quarters, and is always "just rushed to death" with business. He is one of the hardest workers in the profession.

The fall campaign is at hand and political and business matters will probably slightly interfere with one another. As yet there is very little excitement out here. The gay and festive drummer goes his regular rounds, and high tariff or free trade, generally works 20 hours out of 24, with not much prospect of getting his salary raised this year, anyway.

ROUGH DIAMOND.

Birmingham Letter.

[FROM OUR SPECIAL CORRESPONDENT.]

BIRMINGHAM, September 12, 1888.

Buckles for ladies' waistbands and for ornamentation of their dresses are still fashionable, and it appears as though the fashion is likely to last some considerable time, as for the past year and a half

the sale has been constantly increasing. Most of those worn are either silver or metal, the former usually being imitations of the old antique shapes, richly chased and occasionally parcel gilt, but more usually finished white or lightly oxidized. In the latter the number of patterns is beyond description, the French style of ornament being usually preferred, most oxidized to what is known as "old silver" color. We have in these floral scrolls of all kinds, also stamped curb link patterns, and a large variety with an imitation of filigree work on a flat surface; this, when old silver color, being especially effective.

With this fashion being so general clasps are, of course, also in fashion. At first nothing but buckles were sold, but lately the sale of clasps has been increasing so rapidly that it is probable ultimately they will take the place of buckles. The styles in these are very similar to the buckles, but as there is more scope for design there are, if possible, a greater variety of patterns. One pattern I think deserves special mention, has a center of an imitation Roman medal with a warrior's head on it, and lying crossway on the clasp a pair of battle axes, the border being of pierced Roman ornaments, showing the color of the waistband through.

There are several patent clasps on the market, the best one being "The Princess." This is similar in action, but vastly improved, to the clasps so often used in men's braces, the front of the clasp only having to be shut down to secure the belt. This is made in both silver and metal, the designs in the latter being very effective; it can also be had covered with steel studs, but in this form comes expensive, although the design is very effective.

The hard times the jewelers have gone through and which are not quite over, have taught them many lessons which will not be easily forgotten. One of these is the necessity of advertising and letting the public know what jewelry to buy. A cute jeweler having a stock of coral got an article put in the *Daily Telegraph* on coral, and the probability of our soon being unable to get the usual supply. The consequence is that there has been a great run on it, both for gents studs and cuff buttons and also ladies' ear studs; so much so, that it is now three times the price here it was a year since.

Ladies seem to have a mania just now for scent bottles. No lady considers her toilet complete until she has perfumed herself from the spray bottle on her toilet table, and also in most cases placed a small bottle of the same in her pocket.

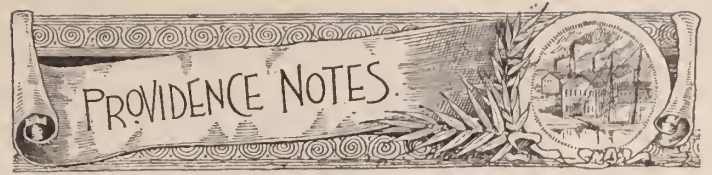
The glass makers have, of course, been equal to the demand and have turned out an endless variety of patterns, the cutting of many of the flint bottles being almost equal to that of diamonds, and in some of the cameo cut ones the combination of color and design is very charming.

The style which sells best is a turquoise blue dull glass with a white ornamentation on it, looking as though a very fine lace cover had been laid upon it; this, of course, being cut up like a cameo. Another one is a deep pink red in the neck, gradually toned down to an orange yellow at the base with maiden hair fern painted on top. The Germans are trying their best to compete in this trade, but with very poor success, as their flint glass is very poor compared with English, and in the cameo work they have but a poor painted imitation.

On all sides we hear manufacturers saying they are very busy and speaking very hopefully about the autumn trade. Truly, our poor harvest will take a lot of money out of the country, but the shipping trade is so much better that it will probably more than compensate for this.

SOLITAIRE.

— A new glass recently invented in Sweden is said to be capable, when made into a lens for a microscope, of "enabling us to distinguish the 204,700,000 part of an inch." It is also said that there is great promise of this glass producing wonderfully powerful telescope lenses, and a new departure in astronomy.



[FROM OUR SPECIAL CORRESPONDENT.]

PROVIDENCE, Sept. 15, 1888.

Business during the month of August, or at least from about the 10th to the first of September, was of an indifferent kind, but an improvement, however, has been noted since the first of September, and it is to be hoped that it will continue to broaden so that its presence may be felt throughout the length and breadth of the jewelry manufacturing world and give employment to the thousands of hands who look to it for their livelihood. Failures during the month past have been very few and for small amounts, to the entire satisfaction of the manufacturer, as he dreads them much worse than a season of dull business. The amount transacted so far for the season has been of the most conservative kind, which would seem to account for the small number of failures among the jobbers.

Mr. Edward S. Holbrook, Treasurer of the Gorham Manufacturing Co., was registered at the Narragansett Hotel the past week.

Mr. Chas. A. Russell has been investing in a residence located on Greenwich street.

Mr. Edmund Eaves, the well-known jeweler of Montreal, has been in the city during the past week buying goods for the fall and holiday trade.

The new "Enterprise Building" just finished is an ornament to the part of the city where it is located, and has a frontage of one hundred and twenty-two feet nine inches on Eddy street, and one hundred feet on Fountain and Worcester streets, and is five stories high. The following named jewelers will occupy parts of the structure: The third floor will be occupied by Howard & Son and the Sterling Co., the fourth by Hamilton & Hamilton, Jr., who have already changed their quarters from No. 226 Eddy street, and the fifth floor by Kent & Stanley, the owners of the building, which is one of the best adapted in the city for the convenience of manufacturing jewelers.

Mr. C. Anthony Fowler has recovered from a short but serious illness of three weeks, and has gone East to remain some time to fully recuperate his health.

The business formerly conducted by Nathaniel Barstow & Co., at No. 29 Point street, is succeeded by Barstow & Williams, who have formed a co-partnership, and will continue the business at the old stand and number as formerly.

The co-partnership heretofore existing under the name of Warren & Wood (agents for Reed & Barton's goods) in this city, was dissolved on August 28 by mutual consent, Mr. James G. Warren retiring on account of ill-health.

Mr. Peter Aspinwall, employed by Potter & Buffington, met with a fatal accident on the 5th inst., by falling from an open door, a distance of sixty feet, killing him instantly.

Mr. N. B. Barton, of Ostby & Barton, has left for the West on an extended trip, and expects to be away for a month or six weeks.

F. T. Pearce & Co. report business to be in a very driving manner with them, and have all they can possibly attend to in the way of orders.

Schutz & Co.'s stock and fixtures were closed out on the 29th ultimo, and were purchased by Mr. R. Schutz through Mr. Edward F. Speece.

Mr. Charles F. Irons has received a large order for badges from the Grand Lodge of Kansas, to be made of solid gold, and are very unique in design.

Mr. O. C. Devereux will soon return to the city with his family from "down East," where they have been spending the summer.

The business of the late firm of Potter, Read & Co., of this city, has been removed to East Greenwich, R. I., where it will be continued by Mr. G. B. Read as agent.

Mr. Ralph S. Hamilton, Jr., of the firm of Hamilton & Hamilton, Jr., has met with a sad loss in the death of his infant son, Howard Truman Hamilton.

Mr. George L. Vose and wife are rustivating at the White Mountains for a few weeks.

Mr. Frank E. Comey has been visiting friends in the city, but returns West soon.

Mr. F. J. Favro, who was burned out during the Aldrich House fire, has taken quarters at No. 26 Washington street.

Tilden, Thurber & Co. have just finished some very handsome medals for the International Bicycle Tournament to be held at Buffalo.

Mr. Gorham Thurber, founder of the Gorham Manufacturing Co., and one of the most influential citizens of this city, died the past week. Mr. Thurber was born in the year 1825, and was, until July last, Treasurer of the Gorham Co., when he was succeeded by Mr. E. S. Holbrook. The funeral was held at his late residence, No. 1 Greenwich street, and was very large. The employees of the Gorham Mfg. Co. attended in a body and contributed many tokens of flowers.

During the past week a delegation of about three hundred of the employees of the American Watch Co., of Waltham, Mass., paid this city a visit of a few hours on their way to Rocky Point for a day's outing. They were accompanied by the American Watch Co.'s band, Mr. T. H. Rollinson, leader, and it was one of the best that has passed through here this season. They had a special train each way.

Before Judge Tillinghast on Monday last in the Court of Common Pleas, the case of Lorsch, Dreyfus & Co. against Chapman & Meister was called, and judgment was submitted to by the defendants.

The will of the late Gorham Thurber was sent to the Municipal Court last week. It was dated May 27, 1887, and covered fourteen pages of legal cap. His son, William H. Thurber, his son-in-law, Chas. S. Sprague, and his friend, George T. Paine, were named as trustees. The testator directs that a trust fund be created out of the estate for the benefit of the widow and the five children, with exceptions of articles of personal property, bequeathed to be shared by all alike at the end of five years. In case of widow this is to be in lieu of dower; the gentlemen named above are also executors. The widow is requested to make certain disposition of property and stocks to come in for her benefit under the trusteeship.

Mr. William H. Thurber, of Tilden, Thurber & Co., was one of the delegates to the International Bicycle Tournament held at Buffalo last week.

The New England Manufacturing Jewelers' Association of this city, held their Ladies' Day celebration on Friday, the 7th inst., at Read's Palace on Coweset Bay. About seventy persons attended and left the city from Sprague's wharf at about 10 A. M. Among the number were noticed President A. L. Potter, Vice-President W. W. Fisher, Secretary John A. McCloy, Treasurer H. F. Carpenter, and Messrs. John M. Buffinton and H. G. Smith of the Executive Committee of the American Association were present, Mr. Frank T. Pearce being absent on business at New York. Dinner was served at about 1 P. M., after which the different series of entertainments, including dancing to the music of Baker Brothers' orchestra, were indulged in, and the whole affair was voted to have been one of the greatest successes of the season with the Association.

Godfrey & Adams are meeting with great success on their line of

specialties this fall, which seems to be as popular as ever with the trade.

The "Acme" lever sleeve button is holding its own, and is considered by the public to be one of the best in the market, and Fred. I. Marcy & Co. are filling heavy orders for them this season.

Mr. John L. Fowler passed several days the past month in New York State rustivating and enjoying the fine September weather.

FAIRFAX.

Charity.



THE JEWELRY trade has promptly responded to the call for assistance which has come to the country from Jacksonville, Fla., now undergoing one of the worst plagues the country has ever witnessed. Jacksonville and several small towns in the South are stricken with yellow fever, and after a noble struggle of several months they appeal to their brethren in the North to help them. Carter, Sloan & Co. started a subscription list which has been circulated among the trade, and up to the 25th of September the following firms have contributed as follows:

Carter, Sloan & Co.....	\$100	Taylor & Brother.....	\$20
Randel, Baremore & Billings....	100	Enos Richardson & Co.....	25
Alfred H. Smith & Co.....	100	Smith & Knapp.....	25
Falkenau, Oppenheimer & Co....	100	Cash.....	5
Gorham Mfg. Co.....	100	Max Freund & Co.....	25
Dennison Mfg. Co.....	100	N. H. White.....	15
Robbins & Appleton.....	100	Eisenmann Bros.....	25
Wm. S. Hedges & Co.....	100	Cash.....	5
Rogers & Bro.....	100	Joseph Fabys & Co.....	25
Oppenheimer Bros. & Veith.....	75	D. H. Wickham & Co.....	25
Krementz & Co.....	50	Mulford & Bonnet.....	25
Dominick & Haff.....	50	Shafer & Douglas.....	25
E. Aug. Neresheimer & Co....	50	J. T. Scott & Co.....	25
Louis Strasburger & Co.....	50	J. F. Townley.....	10
D. & M. Bruhl.....	50	J. B. Bowden & Co.....	25
Cross & Beguelin.....	50	Julien Gallet & Co.....	25
George W. Shiebler.....	50	Ad. Schwob.....	15
Saunders, Ives & Co.....	25	Brooklyn Watch Case Co....	25
C. G. Alford & Co.....	25	Keller & Untermeyer.....	25
Cash.....	25	Sussfeld, Lorsch & Co.....	25
L. & M. Kahn & Co.....	25	E. E. Kipling.....	15
Hayden W. Wheeler & Co.....	25	Sexton Bros. & Washburn....	15
G. & S. Owen & Co.....	25	H. Elcox & Co.....	10
Albert Lorsch & Co.....	25	Day & Clark.....	25
A. Wallach's Nephews.....	25	Edward Todd & Co.....	15
Spencer Optical Mfg. Co.....	25	Howard & Cockshaw.....	25
J. Eugene Robert & Co.....	25	H. G. Combs.....	10
H. C. Hardy & Co.....	25	Downing & Keller ..	15
Wm. Smith & Co.....	25	J. R. Greason & Co.....	10
Wood & Hughes.....	20	Henry Ginnel & Co.....	25
Pforzheimer, Keller & Co., 3d cash		Henderson & Winter.....	10
subscription.....	15	Fisher & Sons.....	5
Cash.....	25	M. Green.....	5
S. Cottle Co.....	15		

Out of the money subscribed, Carter, Sloan & Co. paid over \$2,500 to the chairman of the Florida Relief Fund, which was acknowledged in the following letter:

NEW YORK, September 17, 1888.

Messrs. Carter, Sloan & Co.:

DEAR SIRS—Your check for \$2,500 for the benefit of our sufferers was handed me by Mr. Greenleaf. Allow me to extend to you and your associates in this generous contribution our heartfelt thanks for your timely aid in this, our hour of necessity. I beg to remain,

Very truly yours,

D. G. AMBLER

Chairman Finance Committee.

The subscription papers can be found at Carter, Sloan & Co.'s office, 15 Maiden Lane, where subscriptions will be received.

—There are now 130 miles of railroad in this country operated by electricity, and 150 miles additional are under construction. The first electric railway operated for business was at Los Angeles, Cal., in 1886, where the Daft system is in use.

The Jewelers' and Tradesmens' Company.



THIS ASSESSMENT life insurance society is being built with the noiseless energy characteristic of the forces of nature, its officers presenting as near as possible an absolutely equitable plan which the most intelligent jewelers are becoming interested in, and thereafter showing appreciation by casting their lots with the many hundreds already enrolled. Recently the following named have been admitted:

Henry C. Lesquereux, of Smith & Lesquereux, Springfield, Mass.; Chas. A. Higgins, Brooklyn, N. Y.; Th. N. Donnelly, Chicago; A. Fechenback, with D. & A. Rosenberg, Rochester, N. Y. And the following of New York City: Edwin D. Washburn, with E. A. Thrall; John T. Vansant, Chas. W. Grosche and Augustus T. Francis, with Theodore B. Starr; Geo. A. Schaefer, with Chas. Pine & Co.; Albert Kamp, with Henry Abbott; John G. Klein and A. Gerhard, of J. G. Klein & Co.; Thos. W. Dobbie, with J. Eugene Robert & Co.; Joseph and William Cohn, of J. Cohn & Bro.; Horace R. Bateman, of H. M. Smith & Co.; George W. Shiebler, Louis E. Smith, Jacob Strauss, Abraham J. Schloss, Frank W. Vondersmith, Sigmund Veit, Robert H. Ramsgate, James A. Rich, George N. Joyce, Frank S. Isbell and William Bundy.

We find the following tersely worded homily on assessment insurance in a circular recently issued by this association, and curiously enough, the text is at its close. We commend it to the notice of all who are interested in such matters:

"In every system of life insurance the assured are themselves the insurers. That system is nearest perfection which distributes the actual death cost most equitably, while adding for expenses the very least that will sustain an organization efficiently and permanently. Our system secures equity among members—each paying the exact cost of his risk to the company each year, thus compensating for the insurance furnished—the same advantages to older as to younger members, without disadvantage to either, which means the permanency of the company. Self-interest demands that each shall pay only for what he gets, and that he shall not pay for what another gets. Equity is the general average of self-interest."

More consistent premises and conclusions than the above would be difficult to show.

How to Replace a Balance Staff.

IN THE event of a broken staff a new one is to be made as follows:—In the first place the old balance staff should serve as a model, unless it has decidedly radical defects. The balance is knocked off the brass collar on the old staff and a rough staff selected of approximate dimensions. These staffs are generally sold in the rough by material dealers, but one may be made by driving a steel arbor into a collet of hard brass. The steel should be hardened and tempered just sufficient to allow it to be turned with the graver. A screw ferrule is fixed to the staff, and it is mounted in the turns; the length is reduced to a trifle over the finished size, paying due attention to the relative size of the staff that projects both above and below the brass. The brass is then turned to fit the balance and the balance spring collet, and the length is made right. The staff is then turned down to fit the hole in the roller. The pivots are then made, gauging the position at the shoulders by means of the pinion gauge, using the old staff to measure by. The diameter is made by trying in the jewel holes. The body of the staff is polished, as are the pivots, with crocus on a bell-metal burnisher, English workmen generally using the turn bench with specially-made centers, but the Jacot tool is far more convenient. When the staff is finished the balance is riveted on true, and should be at the precise height, so that it will not be necessary to use a punch to raise or lower it. Very careful handling and constant gauging are the principal requisites for making a balance staff; failing the former, the partly-finished staff is likely to be broken, and by not paying sufficient attention to the latter, some part will be made too small.



TO PREVENT RUSTING.—The rusting of bright steel tools is due to the precipitation of moisture from the air. It may be prevented by keeping the air surrounding the goods dry, and chloride of lime, having a peculiar affinity for attracting moisture, is, with great benefit, used for the purpose of placing a saucerful of it in the case containing such tools of bright steel.

TO POLISH GRAY.—A correspondent says, in an exchange, "I have tried all the recipes I read and which were recommended to me for grinding a dead gray on the steel parts of my clocks, but I must say that I have not been as successful with any as I have been with finely powdered oilstone, stirred into a paste with spirits of turpentine. I have discovered this agent after many fruitless attempts, and can recommend it."

PLASTER OF PARIS CASTS.—The article is copied in soft, yellow wax. Then take gypsum flour, as much as you think necessary, and stir it with water into a liquid paste. Take a fine camel's hair brush and cover the cast first with a thin layer of this paste, then fill the cast full with it, and let it harden. If you do not take the precaution of first coating your cast, you will never have a clean copy; it will always be full of air blisters and holes, originating from the confined air. Should the gypsum flour be old and refuse to set, add one or two drops of sulphuric acid, and it will act as if fresh.

TO EXTRACT A BROKEN SCREW.—All mechanical appliances will sometimes avail nothing for extracting the piece of a screw broken off in its hole, if this has been drilled only in part through the plate. In such a case slightly warm the plate, and cover it well with beeswax. Be careful not to let this touch the broken screw; then make a solution of oil of vitriol—one part of oil of vitriol and four parts of water. Let it stand until quite cold, then put the plate in, and in a few hours the acid will dissolve the screw. The wax may be removed by warming it in olive oil, and washing in hot soap and water.

GOLD-COLORED COPAL VARNISH.—Take one ounce of powdered copal, two ounces of essential oil of lavender, and six ounces essence of turpentine. Put the oil of lavender into a mattress of proper size, placed on a sand bath subjected to a moderate heat. When the oil is very warm, add the copal from time to time in very small quantities, and stir the mixture with a stick of white wood, rounded at the end. When the copal has entirely disappeared, put in the turpentine at almost a boiling heat, at three different times, and keep constantly stirring the mixture until the solution is quite completed. When this varnish is required to be colorless, it will be necessary to use the rectified spirits of turpentine, and not the common essence.

THE BENCH OR BOARD.—A. Saunier says that the bench or board should be fixed in front of a large window that affords a good light. The various hooks, recesses, etc., for holding the bows, files, hammers, etc., as well as the drawers, should be well in sight, not only in order that the hand can at once take hold of whatever tool is required, but also to enable the workman to restore them to their place immediately after use. By doing so he will have no occasion to retain on the bench any but those tools that are very frequently or constantly in use. It is an excellent habit, conducive both to well-planned and rapid work, and which can be easily acquired by a little attention during an apprenticeship, to place the same tool always in the same place, as the bench will then never be encumbered. By this means loss of time in turning over a number of objects in order to find one that may be small is frequently avoided. This observation is of minor importance to specialists who require but a small number of tools; but it is of the greatest importance to a workman who is engaged in the repair of watches.



HOW THE JAPANESE MEASURE TIME.—A party of Americans, describing a shopping tour while recently in Japan, refer among other things to the clocks shown them. Some were constructed on American models, while others were fashioned upon a principal peculiarly Japanese, and supposed to be more convenient for the registration of their singular time. The twenty-four hours are divided in Japan into twelve periods of time, six of which are appropriated to darkness and six to the light. The day being calculated from sunrise to sunset, there is a necessary variation in the length of the six day and night hours, the latter being the longest in winter, the former in summer. The clocks are altered periodically to suit the seasons of the year.

HEAT FROM THE MOON.—During the late eclipse of the moon Dr. Boedicker made a series of experiments on the variations of the lunar heat measured with a Thomson's galvanometer in connection with the Rosse 3-feet reflector at Parsonstown. He concludes that the heat radiated by the moon decreased long ago before the first contact with the penumbra, and twenty-two minutes before totality commenced it was reduced to less than 5 per cent. of that measured twenty minutes before the first contact with the penumbra. That, it will be observed, was rapidly cooling, but the recovery after the last contact with the penumbra was not nearly so rapid.

WHERE DIAMONDS ARE POLISHED.—One of the great industries of Amsterdam is the cutting and polishing of diamonds, and nearly all the finest diamonds in the world are brought here to be cut into shape. We will make a visit to one of the principal diamond establishments, and when we get there I think we shall be surprised to find a great factory, four or five stories high, a steam engine in the basement, and fly wheels and leathern bands, and all sorts of whirling machinery in the different stories. On the very top floor the diamonds are finished and polished, and here we see skilled workmen sitting before rapidly revolving discs of steel, against which the diamonds are pressed and polished. It requires great skill, time and patience before one of these valuable gems is gotten into that shape in which it will best shine, sparkle and show its purity. Nearly half the diamonds produced in the world, the best of which come from Brazil, are sent to this factory to be cut and polished. Here the great Koh-i-noor was cut, and we are shown models of that and other famous diamonds that were cut in these rooms.

INTERESTING OBSERVATIONS.—Recent improvements in telescopes have enabled astronomers to make interesting discoveries, and it is positively asserted by Sig. Schiaparelli, of Milan, who, it is said, has the finest instrument in the world, that Mars is inhabited by a people somewhat like ourselves. He has made the wonderful discovery of a series of canals in that planet. They are nearly a hundred miles wide and run from the sea-coast to the interior. According to Prof. E. A. Boyle, of St. Louis, other astronomers have seen the same phenomena. It is known that Mars has snow and rain, while there are indubitable evidences of animal life. These assertions involve a severe strain on one's credulity.

CLOCK DIALS.—We have sixty divisions on the dials of our clocks and watches, because the old Greek astronomer, Hipparchus, who lived in the second century before Christ, accepted the Babylonian system of reckoning time, that system being sexadecimal. The Babylonians were acquainted with the decimal system, but for common or practical purposes they counted by "sossi" and "sari," the "sossos" representing sixty and the "saros" six times sixty, 360. From Hipparchus that model of reckoning found its way into the works of Ptolemy, about 150 A. D., and thence was carried down the stream of science and civilization and found its way to the dial plates of our clocks.

GOLD AND SILVER.—The director of the United States Mint has reported that, according to his established methods of computation, the gold production of the United States for the Calendar year 1887 was \$33,093,000, compared to \$34,869,000 for 1886, and the production of silver \$53,408,800, compared to \$51,321,500, for 1886. The world's consumption of gold and silver in the arts for the year 1886 is estimated at \$46,000,000 gold and \$22,000,000 silver. The world's production for 1886 he estimates at \$98,764,235 gold and \$126,457,500 silver.

POLISHING THE CHAMPION DIAMOND.—Great crowds collect every evening at Holborn, England, to see the process of what is deemed the champion diamond of the world. Within sight, through the large plate glass window, the artist sits at his bench before the little upright wooden stand, on which, fastened with the composition used for the purpose, stands the half-polished diamond, one part described as being rough and dull as rock salt, the other flaming with internal fire. The artist works on the stone with a curious looking polisher, an instrument described as resembling a thickish bit of fire wood, with one end cut edgewise and covered with composition, and keeps scrubbing and scrubbing with a gentle firmness. It is stated that the diamond, which is from South Africa, will when fully cut, number one-third more karats than the Koh-i-noor, which will have to hide its diminished head in the presence of a luminary bigger than a billiard ball. The jewel is worth half a million. The very chips that are cut off in the polishing fetch small fortunes. The King of Portugal gave \$40,000 for one of them.

TAKING TRADE SECRETS WITH THEM.—Several years ago, it is related, a number of German workmen came to Connecticut by a preconcerted arrangement and obtained employment in the clock factories of New Haven, Ansonia, Waterbury, Thomaston and Winstead. They worked steadily for a long time, applied themselves diligently to mastering the science of clock making and became proficient in the art of handling the fine tools necessary to the work. They also purchased the tools and several of the complicated machines it is said, and, returning to Germany, they began the manufacture of clocks for themselves. They set up a factory in the Black Forest region, and their business amounts, according to their own statements, to nearly 50,000 clocks per month.

NEW OBSERVATORY.—Denver is about to have an astronomical observatory that will rival the famous Lick Observatory in California. Its dome will rise from a plain and have 1,000 feet greater elevation. The building and instrument have been provided for through the liberality of W. B. Chamberlain, of Denver. The framework of the metal dome is of iron and steel, and is made as light as is consistent with a high degree of rigidity. The covering is of galvanized iron. The weight of the dome will be about 12 tons, and the devices for making it revolve easily are very ingenious; the endeavor is to substitute rolling for sliding friction. For this purpose a live ring is employed. This consists of a number of wheels set at equal distances around a circular track; on the circumferences of these the dome rolls. The telescope, which is now being completed, will be a very valuable and expensive instrument. The diameter of the object-glass will be 20 inches, and the length of the tube about 26 feet, of the best hard-rolled steel.

SOME ALLOYS OF GOLD.—A new alloy of gold and platinum upon which Mr. D. C. Roberts Austen has been engaged for some time, takes fire on being thrown into water, and the gold is released as a black powder, differing from ordinary gold in its property of readily forming auric hydroide. This abnormal form of gold, which becomes normal metallic gold on heating, is said to have been long ago utilized by the Japanese. They obtain it from its alloy with copper, with which they form ornamental metallic designs upon knife handles, etc., and then release the dark-colored gold by a pickling process. In this way, they have produced an appearance of transparency in a metallic representation of water, at a place where in the design a duck was represented plunging half its body below the surface of a stream.



—The following named out-of-town dealers were noticed in this city since our last issue: W. F. Arteinann, Albany, N. Y.; C. A. Scudder, V. W. Skiff, Athens, Ga.; F. J. Stilson, Mr. Freeman, of Freeman & Crankshaw, A. L. Delkin, Atlanta, Ga.; Mrs. H. M. Merrick, Bloomington, Ill.; L. F. Brooks, L. Harrington, Boston, Mass.; Mr. Turck, of Leyson & Turck, Butte, Montana; W. F. Spurlin, Camden, Ala.; Mr. Thomas, of Carrington, Thomas & Co., Charleston, S. C.; F. E. Morse, C. K. Giles, L. W. Flershem, Mr. Joseph, of Joseph & Fish, Chicago, Ill.; C. H. Duhme, Cincinnati, O.; J. Meckes, Mr. Hubbard, of the Cowell & Hubbard Co., Cleveland, O.; A. S. James, Columbia, Tenn.; Mr. Harrington, Columbus, O.; J. Knepfly, Dallas, Tex.; J. W. Brill, Danville, Va.; R. J. F. Roehm, Detroit, Mich.; J. E. Bixler, Easton, Pa.; C. E. Gifford, Fall River, Mass.; A. P. Keesecker, Greenville, Miss.; Mr. Ott, Hanau, Germany; S. B. Donchiau, E. Schall, Hartford, Conn.; J. B. Ryan, Honey Grove, Tex.; A. McHenry, F. J. Hutchinson, Hornellsville, N. Y.; H. W. Curtis, Knoxville, Tenn.; M. B. Hall, Liberty, N. Y.; I. Snell, Little Falls, N. Y.; Jas. K. Lemon, B. F. Rodgers, T. Pottinger, of Geo. Wolf & Co., Louisville, Ky.; C. L. Byrd, Memphis, Tenn.; F. Thoma, O. E. Zadek, Mobile, Ala.; C. L. Ruth, Otto Stoelker, Montgomery, Ala.; W. H. Lyon, Newburgh, N. Y.; E. M. Munger, New Haven, Conn.; A. M. Hill, New Orleans, La.; C. R. Starr, Owego, N. Y.; J. C. Woelfle, Peoria, Ill.; C. M. Wattles, J. Reed, Otto Heeren, W. Wattles, Pittsburgh, Pa.; L. Sunderlin, Rochester, N. Y.; C. F. Kleine, San Antonio, Tex.; George Cook, Sherman, Tex.; J. Bunn, Jr., Springfield, Ill.; M. F. Robinson, Springfield, Mass.; C. F. Mathey, St. Louis, Mo.; T. B. Myers, St. Paul, Minn.; A. P. Seymour, E. B. McClelland, W. A. Warner, Syracuse, N. Y.; J. J. Freeman, Toledo, O.; C. P. Wells, Towanda, Pa.; S. C. Tappin, Troy, N. Y.; E. Harris, Washington, D. C.; Frank A. Knowlton, Worcester, Mass.

—The following named dealers sailed for Europe since our last issue: D. Dessau, Albert Lorsch, of Albert Lorsch & Co.

—The following named dealers arrived from Europe since our last issue: A. J. G. Hodenpyl, of Hodenpyl & Sons; Max Freund, E. Aug. Neresheimer, L. Tannenbaum, Jules Racine, of Julien Gallet & Co.; N. L. Ripley, of the Ripley-Howland Mfg. Co.; L. F. Brooks, of Brooks & Pike, J. D. Alling, A. Hahn and Chas. Schaffer, of Hahn & Co.; E. J. Ovington, of Ovington Bros.; S. Wallach, G. H. Ford, of New Haven, Conn.; C. H. Case, of Hartford, Conn.; Mr. Hubbard, of the Cowell and Hubbard Co., Cleveland, O.; Harrison B. Smith, of A. H. Smith & Co.

—Henry E. Oppenheimer & Co., importers of diamonds, have an excellent stock for the fall season. In fine mountings for diamonds they manufacture and carry in stock a large line.

—Mr. L. Newman, Jr., of 36 John St., who started in the business of gold and silver plating, etc. about a year ago, is making a success of it, and is now doing a good business. He does very fine work.

—Attention is called to the advertisement of Mr. Charles Jacques, of 2 Maiden lane, who has an elegant line of marble and exhibition clocks of late importation. Dealers will be repaid for a visit to Mr. Jacques' salesroom.

—The C. N. Swift Mfg. Co., of 115 Chambers street, again calls the attention of the jewelry trade to their line of fine boxes for segars, tobacco, etc. These boxes are now regarded as a proper article for the stocks of jewelers, and last year a large quantity were sold by some of our first retail stores. Attention is called to their advertisement in this issue.

—The San Francisco Diamond House, of San Francisco, Cal., is a new incorporation. Capital stock, \$10,000, divided into 1,000 shares. Directors—J. W. Carmany, C. B. Young, Edwin Goeller, Gabriel Cohn, Frederick Quane, Robert Ferral and David Sachs.

—Mr. W. W. Oliver, of Buffalo, N. Y., illustrates a rolling mill suitable for jewelers in his advertisement this month. He manufactures all sizes and kinds of rolling mills besides an infinite variety of machinery, etc., for jewelers. His catalogue can be had on application.

—The American Mfg. and Supply Co. are having a good trade in their new styles of marble mantle clocks of the now well-known self-winding pattern. The cases of these clocks are equal to the finest French clocks ever imported, and the character of the movements makes them very salable.

—The death is announced of George D. Bones of Philadelphia, at the age of 33. He was a very successful young man and though he had only been in business for himself since 1878, he built up a fine trade, and made many friends. The business will be continued by his brother, Mr. E. H. Bones.

—The Wilcox Silver Plate Company is in the market with a line of silver plated goods which for beauty and novelty of design are not to be surpassed. Their showroom at 6 Maiden lane contains the full assortment of new goods for the fall season, which dealers will be wise to inspect before making any purchases elsewhere.

—A "Cleveland and Thurman Club" has been formed by some well-known jewelers, who propose to have a grand parade this month. Subscriptions will be received by officers of the club to defray the expenses of the campaign, which is expected to be lively. As yet we have not received notice of any Republican organization, though there has already been considerable talk about one.

—The Middletown Plate Company have one of the most complete exhibition of plated silver ware that can be found anywhere. The wants of all classes of buyers are represented in the large array of designs, and fine goods, cheap goods, plain and fancy, new or staple, can be found upon their shelves. In hollow-ware sets of various kinds, their line is especially complete and will repay inspection.

—The jewelers now coming to town to make their fall purchases, will leave their trip incomplete if they fail to visit the showrooms of B. & W. B. Smith, makers of artistic showcases. Some may think they need nothing in this line, but doubtless they will decide otherwise when they see the handsome small cases with the very narrow mouldings which are made up in styles suitable for making exhibits of thimbles, scarf pins, fancy jewelry, etc. outside the ordinary counter cases.

—Mathey Bros., Mathez & Co., of 16 Maiden Lane, is the headquarters for several celebrated makes of complicated and timing watches. Their stock this season contains a much better assortment of this class of goods, and while a good line of extra high grade watches are kept on hand constantly, the more popular medium grades, especially the split seconds, are kept in larger quantities than heretofore, and dealers in need of these goods can always obtain them on short notice.

—In Limoges, France, china is selling at a lower rate than it has for many years, the reason being that the price of labor has decreased ten per cent. in the last five years; machinery has in many instances replaced hand labor, and one class of workmen (the saucer-makers) has entirely disappeared. A decline in the number of furnaces is noted in the fact, that in 1882, there were in operation 3,106, and in 1887, only 1945. This, however, was an increase of nearly 100 furnaces since the year before, amounting to \$100,000. Limoges china is in demand all over the world, but by far the greatest share comes to the United States. Last year the production amounted to over 8,000,000 francs, nearly one half of which was imported to this country. Freight charges from Limoges to the United States are from 83 to 120 francs per ton.

—Mr. L. H. Keller is expected to arrive from Europe about the 10th of October.

—The Ladies' Day Celebration by the New England Manufacturing Jewelers' Association on the 7th of September, was a very successful affair.

—Herring & Co., the celebrated safe makers, show in this issue an illustration of a new kind of safe, just put upon the market by them. Attention is called to their advertisement which explains the nature of the improvement over old style safes.

—The Ott & Brewer Co. of Trenton, N. J., sole manufacturers of Belleek China, an entirely new production, have many attractive designs now on exhibition. These goods are sold exclusively to jewelers, who may arrange with the manufacturers to control the sale in their own cities.

—It has been demonstrated that platinum wire may be drawn so fine as to be invisible to the naked eye, although its presence upon a perfectly white card can be detected by the touch, and can be seen by the aid of a small magnifying glass when the card is held in such a position that the wire cast a shadow.

—Charles W. Schnell, a diamond broker recently in the employ of Becker & Kohl, was found to have skipped to Canada last month after having secured about six or seven thousand dollars' worth of diamonds from several importing houses. In Canada he had hard luck, for he was arrested for bringing stolen goods into the country, and rather than be tried there he consented to come back to New York for trial. The Canadian authorities have retained the goods seized when they arrested Schnell, until they receive word that he has been indicted here, when they will be returned. The firms from whom he obtained the goods expect to recover them.

—Mr. Adams, *alias* Mr. Lee, *alias* many other names, who stole a paper of diamonds from Ludwig Nissen & Co. last month, and was captured the next day minus the diamonds, turns out to be a notorious crook, whose photograph embellishes all of the principal Rogues Galleries in the country. It is now believed that he is the same person who stole the \$7,000 worth of diamonds from Burt & Hurlburt, of Detroit, last April. He has been held here for examination by the grand jury and then will have to answer for the Detroit robbery. The police reports say that Adams is one of the most dangerous diamond thieves in the country, and his capture may be regarded by the trade as a cause for congratulation.

—The curious commingling of trades and professions by some country folks which has often been illustrated in THE CIRCULAR in regard to jewelers, etc. A prominent Philadelphia optician who does considerable trading with small country tradesmen in his vicinity, shows orders for a few dozens of cheap spectacles or eyeglasses of which the following are illustrations: John Smith, Undertaker and Optician; G. W. Johnson, proprietor of Johnson's Hotel and First Class Optician. The same dealer recently received an order from the penitentiary at Anamosa, Iowa, for a few dozen spectacles —presumably for the inmates?

—Joseph W. Greene, of J. W. Greene & Smith, 170 Broadway, the oldest jeweler in the country in active business, died at his home in Brooklyn, on Sept. 20th, aged 90. He was born in Warwick, R. I., in June, 1798, and at the age of sixteen left off schooling to enter a cotton factory. He advanced rapidly and before many years had a factory of his own. In 1833, he gave up the cotton factory and went into the jewelry business, entering the firm of William Greene & Bros., established some time previously by his brothers William and James in Providence. Soon afterwards they moved their factory to Brooklyn, and established an office in New York on William street, near Pine, which was afterwards removed to 42 Maiden Lane. A Philadelphia branch was also established, which was in charge of William Greene. In 1840 the firm dissolved, and the Philadelphia business continued by William Greene while the other brothers continued the business in New York. Joseph W. Greene, after the death of his brother James in 1843, continued for several years

alone, and moved to 31 Maiden Lane, where he admitted into partnership his brother-in-law, George W. Smith, and his son James H. Greene. In 1865 James H. Greene retired, and the firm name was changed to J. W. Greene & Smith. Mr. Smith died in 1881, and his son Warren G. Smith was admitted. The factory was removed again from Brooklyn to Providence, a few years ago. Mr. Warren G. Smith will continue the business the same as usual, until the settlement of Mr. Greene's estate, which may be expected about November. The death of Mr. Greene, besides removing from us the oldest member of the trade in active business, also takes away a most worthy and estimable gentleman. He has always had the honor and respect of his fellow tradesmen, with whom he was noted for his honorable dealing. His funeral was held on the Saturday following his death, and was attended by a host of the social and business friends of the deceased.

—Robbins & Appleton have lately invented an attractive device for displaying the Waltham non-magnetic watches in an effective manner. It is a handsome oak box, nicely polished, about fifteen inches long, seven wide and six high. The box contains certain parts of two clock movements, so adjusted in a peculiar fashion as to impart a revolving motion to a spindle set up over a horseshoe magnet of ordinary power, which is placed in position on top of the box. The spindle revolves constantly from the force imparted to it from the clock work inside the box, and upon either end is placed a Waltham watch, the one an ordinary movement and the other the new non-magnetic Waltham watch. The motion of the spindle is such that each movement is made to stop for a few seconds directly over the pole of the magnet, and the onlooker can thus observe the effect of the magnet upon the balance spring, which is in full view. The balance in the ordinary movement is observed to stop suddenly when it reaches the magnet, while that of the non-magnetic watch is seen to be unaffected when exposed to the power of the magnet. This device is certainly very simple and attractive. A few have been made and more will shortly be placed in the large stores as an advertisement of Waltham non-magnetic watches. Those now out are attracting many persons to the windows where they are exhibited.

—An exceedingly well-planned scheme to victimize S. F. Myers & Co., No. 48 Maiden Lane, was frustrated through the discretion of Mr. Blumauer, a member of the firm. On Tuesday evening, Sept. 25, about 5 o'clock, a slim-built man about 5 feet 7 inches in height, well-dressed in a black sack coat and wearing a brown derby hat, entered the store, and approaching the watch department, stated that he was a customer of the house and desired to purchase some watches. After examining a line he selected a dozen gold cases and movements, and desired them to be fitted. Mr. Blumauer said it required some labor to fill the order, and asked Mr. J. B. Newman—the name given by the customer—to leave a deposit. "I have no funds with me," replied Mr. Newman, "but I will call at 10 o'clock sharp in the morning and pay for the goods in full." With an urgent request that the goods be ready at the hour named, Mr. Newman departed. The watches were carefully adjusted, but Mr. Newman did not appear at 10 o'clock sharp as he had promised. However, at about 12 o'clock he came in, and stating that his boy had been delayed at the bank, placed upon the counter a check on the Garfield National Bank for \$177.66, certified; indeed, the certification is pronounced to be absolutely perfect, yet it is a forgery. The check having been filled out for the exact amount of the bill, less the actual cash discount, made it appear more plausible, and gave almost convincing evidence that Mr. Newman was in the trade. Still S. F. Myers & Co. have a standing rule never, under any circumstances, to accept a check from a stranger until after investigation. Hence Mr. Blumauer stepped into the counting-room, saying he would have a bill made out, and then telephoned to the Garfield National Bank, asking about Mr. J. B. Newman's check for \$177.66. The answer quickly came: "Forgery; hold him." Mr. Blumauer returned to the watch department, but the forger had evidently heard the telephone bell ring and had promptly disappeared.

—Mr. H. Whitehouse, of Spokane Falls, W. T., was burnt out on September 15 in a large conflagration in that city, in which \$300,000 worth of property was destroyed.

—S. A. Yates & Co., of Washburn, Wis., are reported to have been damaged \$3,000 in the fire which recently occurred at that place, which destroyed almost the entire business portion of the town.

—Mr. Alfred F. Cross, of the firm of Cross & Beguelin, returned from Schroon Lake, where he spent the months of August and September. He looks well and his friends are glad to see him back in the Lane.

—Mr. George Tarrant, lately the foreman of the shop of Oliver Bros., and Mr. L. Gismond, have entered a partnership under the style of Tarrant & Gismond, at 15 John street. They will manufacture a line of jewelry, and Mr. H. Oliver will represent them on the road.

—The Phoenix Glass Co. illustrate in their advertisement this month a couple of handsome patterns of rich cut glassware. In this class of goods this house is up to the times, and show an elegant assortment of all the latest kinds of fashionable ware in new and exquisite designs. Their line of art glassware is replete with an excellent assortment of fine goods, and buyers will do well to examine the lines, as they cannot be procured elsewhere.

—Carter, Sloan & Co. report very fair trade for the past few months. They have lately turned out a large line of novelties in jewelry, for which there seems to be a growing demand. The novelties include gold crochet needles, cigarette holders, gold and silver garters, and dainty pieces of jewelry of every description. Their travelers are upon the road, and dealers will do well to examine their samples, as a large number of original and catching designs are shown exclusively by this house.

—The American Waltham Watch Co. have just put on the market a new one-size watch, the "G, one-size," which completes the series of one-size watches for the present season. The entire series, therefore, is composed of the following grades, namely: "Amn," nickel; "Riverside," nickel; "Royal," nickel; "B," nickel; "F," nickel; and "G," gilt. These watches are cased only in 18-k. and 14-k. gold. They are selling rapidly, especially in the cheaper grades. The new "G," one-size, is in great demand.

—For the past few years in each succeeding season it has been the custom of the jewelers more and more to handle bric-à-brac and fine fancy goods. Among the houses dealing in these wares is the firm of L. Straus & Sons, whose extensive establishment at Nos. 42, 44, 46 and 48 Warren street is filled with a collection of fine and price-worthy articles such as are seldom exhibited by any one house. Onyx clocks and side pieces, onyx pedestals, bronzes, both real and French, and bric-à-brac from every manufactory of repute, are here exhibited in an endless variety. We cannot in the short space of a few lines do justice to their exhibition; we can only convey through our journal to its readers the cordial invitation of the Messrs. Straus to visit their establishment.

—One of the busiest places in Maiden Lane is that of the Spencer Optical Company, No. 15. Their standard goods have become so popular and the demand for them being a regular one, a dull season is scarcely known either in the store or at the factory. They carry an extensive stock of spectacles and eye-glasses to supply this regular demand, and, in addition, have on hand a full assortment of opera glasses, lorgnettes, etc. The trade in these is affected by seasons and fashion, and just now the run on lorgnettes and opera glasses is very great, as the fall amusement season has fairly opened. The Spencer Company has a splendid assortment of these goods, in all sizes and of a great variety of material. Some of the novelties this year are more attractive than any heretofore introduced by this enterprising house. Notwithstanding the busy times, everybody about the place finds time to be attentive and courteous, which always makes friends.

—It is a singular and as yet unexplained fact that in certain species of vegetable growth there are found a variety of stones, supposed to be formed and deposited in their tissues from the silicious and calcareous juices circulating in their organisms. Thus, in the bamboo a round stone is found at the joints of the cane, called "tabasheer." Another curiosity of the sort is the "cocoanut stone," found in the endosperm of the cocoanut in Java and other East Indian islands. Dr. Kimmins describes it as a pure carbonate of lime. It is sometimes round, sometimes pear-shaped, while the appearance is that of a white pearl without much luster. Some of the stones are as large as cherries, and as hard as felspar or opal. They are very rare, and are regarded as precious stones by the Orientals, and charms against disease or evil spirits by the natives. Stones of this kind are sometimes found in the pomegranate and other East Indian fruits. Apatite has also been discovered in the midst of teak wood.

—We have been favored with a copy of the new autumn catalogue of the Gorham Manufacturing Company, one of the handsomest and neatest pieces of elegant printing we have ever seen. The book contains 215 pages, of a size slightly smaller than the pages in THE CIRCULAR. The cover is of a very heavy paper material embossed to imitate birchbark, which it imitates perfectly. The illustrations in the book are unique, and many of the pages are delicately tinted and surrounded by beautiful border work. The frontispiece is a reproduction by a new process of the likenesses of several famous race cups made by the Gorham Mfg. Co., handsomely grouped together and bordered with yachting and sporting scenes. The title page, table of contents and introduction are also elaborated upon in exquisite style. The book opens with a readable description of Versailles, and following the description are several pages devoted to illustrations of the "Versailles," the latest and most beautiful pattern ever made by this company. The rest of the book is devoted to illustrations of other patterns in silverware, brass and leatherware, plated ware, ecclesiastical goods, etc., each illustration being treated in the same careful and tasteful manner that characterizes those of the newest designs.

—In the June number of THE CIRCULAR appeared a paragraph noticing the offer of R. & L. Friedlander of a cash prize of \$25 to the watchmaker who invented before August 1 the best machine for counting the number of teeth in watch wheels. Material dealers often receive imperfect small wheels from watchmakers with an order for a perfect one to match. It is necessary then for a clerk to count each tooth in the wheel besides gauging the size. It was hardly to be expected that many inventive watchmakers would respond to an offer of this kind, but up to the time limited R. & L. Friedlander have received many letters and about five or six schemes. All but four were ruled out of the competition as being utterly unpractical and these four received the judgment of a committee of well-known watchmakers on September 22. The committee was composed of Messrs. H. H. Heinrich, Charles S. Crossman and Louis Brüggeman. There were present a representative of THE CIRCULAR and half a dozen reporters of the New York daily press. The first thing considered was an elaborate machine in brass and steel from I. Herrman, President of the Technical Institute, London, England. This machine was a careful and intricate piece of work and was much admired, but it was regarded as being too complicated and too hard to work. The next was an elaborate design and description from Mr. C. Roller, of Geneva, Switzerland. A translator was at hand and the description created much interest, and if Mr. Roller had sent a machine his chance of obtaining the prize would have been better. A little nickel gauge was sent by Mr. B. R. Jolly, of Raleigh, N. C., which counted the teeth of a wheel by clicks, and this instrument was extremely simple; but as no time or labor was saved in the operation it was not available. The last machine was one from Mr. E. L. McKenzie, of Elkhorn, Wisconsin. It was a queer looking instrument of iron or steel, with a large, corrugated wheel. At one end of the wheel, which is about an inch and a half wide, is a disc with the numbers registered upon it, and the teeth fitting in the corrugations are thus counted upon the register. The machine sent is rather crude and needs several improvements, but in the mind of the committee it was the best instrument received. Accordingly, R. & L. Friedlander have awarded the prize of \$25 to Mr. McKenzie. The improvements necessary in his machine to make it perfect are very slight, and when adopted it is likely that it will work very finely. We congratulate Mr. McKenzie upon his success, and credit is due to the other competitors who, though unsuccessful, have done so well in planning such fine and admirable pieces of work.

—Charles Vagt & Co., large dealers and importers of china, glass-ware, etc., made an assignment last month.

—Mr. M. L. Bowen, formerly of Battle Creek, Mich., will open a fine jewelry store at Fort Madison, Iowa, about October 15.

—Mr. A. C. Smith, secretary and business manager of the Non-Magnetic Watch Co., is on a business trip through the West.

—Mr. Cox, of the Cox & Sedgwick Mfg. Co., has gone on a trip with their western traveler, partly for pleasure and recreation and partly for business.

—Mr. Wm. H. Atwater, of the E. N. Welch Mfg. Co., who has been dangerously ill for several weeks, is now past all danger and on the road to recovery.

—Mr. Edwin A. Thrall is doing a very active business at present, and has an attractive assortment of goods of all kinds to show to his customers. He carries full lines of all standard goods, and all the novelties introduced.

—Rolla E. Smith, a jeweler of Wilkesbarre, Pa., but recently of Binghamton, N. Y., dropped dead in a jewelry store on Saturday night, September 15. He had been troubled with heart disease for some three years past. He was 38 years of age, and leaves a wife and three children.

The Peoria watch movements, now being closed out by two well-known jobbing houses, are selling very fast. The delivery of these movements is somewhat retarded by the fact that the Peoria Company is using all possible care in adjusting them, which, of course, is of necessity very slow work. The Peoria Watch Co. are reported to be making a line of non-magnetic watches.

—The death is announced of Mr. Henry F. Von Storch, a well-known jeweler of Yonkers, N. Y. He died very suddenly of heart disease. He was born in Scranton, Pa., in 1841, learned his trade in Attleboro, Mass. In 1861 he went to Yonkers in the employ of a jewelry firm, and later entered into business himself. He was well-known and highly respected by a large circle of friends.

—Stern & Stern are doing a large business in diamonds and diamond jewelry, of which they carry a large stock. Their show window is one of the finest on Maiden Lane, and usually displays a fine assortment of diamond ornamented "Eclipse" watch cases, large and well matched pairs of diamonds, select patterns of jewelry, etc. This house reports trade as very good on the road at present.

—The celebrated watch movements imported by J. Eugene Robert & Co. will fit all ready made American cases of the standard sizes, and can be obtained in various grades. Dealers in search of complete watches for the fall will find it profitable to visit this house, which keeps constantly in stock a large line of desirable goods of every grade, and made up in cases of an infinite number of designs.

—The several grades of ladies' watches made by the Illinois Watch Co. are having an increasing sale. About 200 ladies' movements a day are turned out at the factory, and the demand is greater than the supply. It is currently reported among the trade that this company will introduce some new movements next spring of 14 size and 16 size. If this is true, this company will then have a larger assortment of sizes than ever before.

—We were recently shown a photograph of Mr. Samuel Sondheim, of D. & M. Brühl, who has established a branch of his house in Yokohama, Japan, for the sale of diamonds and precious stones. The photograph is an excellent likeness, and is a fine example of Japanese art, for it is fully equal, if not superior, to any photographs of our best photographers. Mr. Sondheim writes that at present he does not find trade very brisk. The majority of the natives, he says, live on six or eight yens a month (a yen is equal to about seventy-five cents), and at that rate it is hard to imagine what the Japanese could want of diamonds. But we hope the country is civilized enough to have such a thing as a Christmas trade, and if so, we wish Mr. Sondheim a good holiday business.

—The letters from our special correspondents this month are bright with reports of trade matters from all sections, and will, no doubt, be eagerly read. Reports of trade differ, and while some show poor trade for September, others report it to have been excellent. All agree, however, that the prospects are good for fall. The presidential election seems to be making less disturbance than hitherto, which may be regarded as a promising sign.

—Odenheimer & Zimmern have sent out an illustrated circular and price list, showing in excellent style a line of their interchangeable initial rings, lockets and sleeve buttons. Samples and selection packages of these goods are sent on application to responsible dealers, who can thus see the many advantages of the interchangeable plan made exclusively by this firm. Odenheimer & Zimmern also receive and give careful attention to orders for special designs and emblem work.

—Simpson, Hall, Miller & Co. report a very brisk trade, and say that they receive very encouraging reports from their travelers. In all lines of silver plated ware they have increased and beautified their assortment, and in fancy nut bowls on which they have had a great run, they show a larger line. These nut bowls simulate in appearance and finish leaves and flowers and rustic work, and with a gold lining the effect is very rich. They must be seen, however, to be fully appreciated.

—Frank M. Whiting & Co., at their New York office at Broadway and Seventeenth street, show a fine line of silverware, consisting of flat ware, cups, napkin rings, trays, toilet articles and all sorts of novelties in silver. In all of these goods they show an assortment of patterns and beauty of finish that are astonishing when it is remembered that this house only entered this particular field but recently. In silver jewelry they still continue to show a large line, many new and popular patterns having been added from time to time.

—The friends of Mr. J. D. Yerrington will heartily sympathize with him in the tragic death of his son, Mayhew Yerrington, a promising young artist. The young man was drowned in the Hudson on Thursday, August 13, being one of a party of six persons, of whom but one survived. The party were cruising about in the river near Hastings, and their boat, which was an old one and hardly fit to use, sank suddenly while they were in mid-stream, giving them no time to save themselves. The body of young Mr. Yerrington has been recovered.

—The following advertisement appears in a small printer's paper published in New York City. It offers such a fine opportunity to our diamond importers and others who desire to enter into business at very low cost, that we reprint it free of charge. The staff of THE CIRCULAR are doubtful whether to invest, but would be pleased to see millionaires grow up around them.

PRECIOUS STONES.

One Ruby, 3 Garnets (different colors), 3 Titanite, 1 Zircon, 1 Amethyst, 1 Jargon Diamond. The whole lot to agents for 28 cents, to introduce the business. Send now. Money refunded (minus postage), if not satisfactory.

The publisher accepting an advertisement like the above is *particeps criminis* in any fraud that may result therefrom. Any man with any sense must know that the offer is a deception and a snare.

—Crouch & Fitzgerald, the well-known trunk makers, who for many years in their down-town office in the basement of 1 Cortlandt street have been greatly hampered for want of suitable show room, have removed to 14 Cortlandt street, where they have taken the large store recently occupied by the F. Kroeber Clock Co. For fifty years this firm has catered to the wants of commercial travelers, and in that time have introduced many improvements in sample trunks and cases suitable for their use. They have therefore gained much experience from their dealings with traveling men, and their "lightest trunk," recently put on the market, has met with hearty approval wherever seen. One of the rules of this house is to use nothing but the best material and workmanship in the manufacture of their stock; and this rule partly accounts for their success. Their new quarters are nicely fitted up, and when the entire stock arrives it will be worth seeing.

—The death is announced of Mr. James Prentice, the noted optician, of 176 Broadway.

—Mr. J. H. French, the auctioneer, has just closed a sale for Mr. A. G. Ising, of Danbury, Conn.

—Mr. Fred. F. Goddard, formerly with his father, Mr. John M. Goddard, has gone to Pittsburgh, Pa., to enter the employ of Goddard, Hill & Co.

—Mr. Hiram Camp, the President of the New Haven Clock Co., whose portrait recently appeared in THE CIRCULAR, has been nominated for Governor of Connecticut by the Prohibition party.

—The Ohio Retail Jewelers' Association will hold an annual convention in Cincinnati October 8, and will continue in session three days. About two hundred delegates are expected to be present.

—The firm of Slemmons & Ganter, of No. 77 Fifth avenue, Pittsburgh, was by mutual consent dissolved on August 27, Mr. Oscar C. Ganter retiring. The business will be conducted in future by Mr. John O. Slemmons at the original number.

—The English Watch Company, of Birmingham, England, for the third time in as many years find themselves unable to declare a dividend. The late manager, Mr. Haseler, resigned his position and has started in business in company with his eldest son.

—At the last chronometer test for the hydrographic service of the French Navy, chronometers of the celebrated makes of Delphine and Leroy, containing palladium balance springs, took the first six prizes and was purchased by the government. These are the Pallard patent palladium springs manufactured by the Non-Magnetic Watch Co.

—Mr. John A. Riley has produced a line of fine miniature brooches and puff combs, which for richness of design and finish it would be hard to surpass. Some of them are plain or artistically chased, but by far the most handsome are those patterns set with jewels. The patterns are antique, and remind one of the rich jewelry of the French Renaissance.

—The New York *Sun* reporter recently interviewed a "John street jeweler," who said he had no doubt that the jewelers of New York City lose \$10,000 or \$15,000 a year from ring thieves. This is a revelation, but if true, jewelers should all use the ring trays of the protected style, with a steel bar running through each ring, which are only a trifle more expensive than the unprotected ring trays.

—Jacot & Son, the musical box dealers, have just issued a new illustrated catalogue. It is a handsome book of fifty pages, and contains illustrations of a great variety of musical boxes and materials used in repairing them. The demand for musical boxes is growing, and dealers are wise who always keep a few of the latest patterns in stock. Attention is called to the advertisement of Jacot & Son this month, in which appears an illustration of one of the latest styles.

—We have received from King & Eisele, of Buffalo, N. Y., a glowing account of the great fair being held in that city, accompanied with a handsome gold plated medal made in their factory in commemoration of the event. The letter we have received says that the fair has been the largest ever seen in that part of the country. "In two days the attendance was over 100,000, and there was hardly room enough to hold the strangers. A large number of our customers called on us, and were surprised to see our well-equipped factory and the amount of goods we make."

—J. B. Bowden & Co. are in the market with one of the finest lines of rings to be found anywhere. This house has achieved a name in the ring business for the excellent quality and finish of their goods, and their success in their line shows that they merit the distinction which they have. At present they are having an unprecedented run on rings set with diamonds in combination with other stones. The most popular combination, judged by the number of sales, seems to be the diamond and pearl, which are shown in two and three stone sets and in other clusters. The trade should examine the stock shown by the travelers of this house.

—We are glad to note the increasing business of the house of L. B. Citroen & Co., which under the energetic management of the New York partner, Mr. N. Kauffman, is constantly widening its field of trade. This house has an announcement in this issue.

—The firm of Nathaniel Barstow & Co., of Providence, R. I., has been succeeded by Mr. Nathaniel Barstow and Mr. W. S. Williams, under the style of Barstow & Williams. The old firm will collect all the accounts and liquidate the indebtedness of the old firm.

—The Essex Watch Case Company, of Newark, N. J., recently made and sent to Philadelphia ten handsome 14 karat gold watch cases which are for the New York base ball team. A diamond is engraved on the front with a space for a monogram. On the back are bats crossed and three balls encircled with a belt and surmounted by a cap.

—At the National Electric Light Convention held in this city for three successive days last month, the American Waltham Watch Co., the Non-Magnetic Watch Co. and the Anti-Magnetic Shield and Watch Case Co., exhibited their products in the line of watches uninfluenced by magnetism. The watches were a source of great interest to the assembled electricians, who know perhaps better than any one else what an evil effect electricity would have on the delicate mechanism of a watch. Each of the companies mentioned had special parlors in which they made a handsome exhibition of their watches, and they were ably represented.

—The Secretary of the Treasury, who was recently petitioned by several of our prominent stone importing houses regarding a decision of his department to lay a duty of 20 per cent. on agates, etc., has sent a reply to the petition in which he declined to reverse his decision. He has again been written to in the matter, and it is to be hoped he will take the common sense view of the question. The point at issue is whether agates used in jewelry, such as cameos, intaglios and small bits of onyx, ready cut, are or are not precious stones. If precious stones, the duty would be only 10 per cent., while all stones not classed specially in the act under which the duty is laid must pay a duty of 20 per cent. Our importers justly claim that cameos, intaglios, etc., are precious stones, and amply prove their claim by able arguments.

—By the death of Mr. Herman Duhme, Sr., the firm of Duhme & Co., of Cincinnati, O., consisting of Messrs. Herman Duhme, Sr., Robert H. Galbreath, Frank and Charles H. Duhme, existing on and prior to August 21, 1888, has been dissolved, and the following notice has been issued:

"Cincinnati, September 3, 1888.

The undersigned have this day formed a co-partnership under the firm name of Duhme & Co. The business will be managed by Robert H. Galbreath, Frank and Charles H. Duhme. *Signed*, Mary C. Duhme, Robert H. Galbreath, Herman Duhme, Frank Duhme, Charles H. Duhme, Charlotte Duhme. The house of Duhme & Co., now about entering the second half century of its existence, begs for a continuance of the confidence and business which has been extended to it in the past."

—Mr. Max L. Gutman, the gentleman who was recently sent by the Chamber of Commerce of the city of Rochester, N. Y., to inspect the various watch factories and to study up the history of watch making in the United States, has made a report to that body in which he favors the project of starting a watch factory in that city. Mr. Gutman says in his report, and very truthfully, that the watch-making "industry is profitable to the investors as well as the operatives, and the entire community where it is carried on shares in its benefits by reason of the skilled labor which it demands and which would naturally build up homes in our city, and hundreds of our young men and women could at once find profitable employment in the art." He also makes other wise suggestions, and if a watch company is formed, and rumor has it that one will be organized with a capital of \$500,000, he doubts not but it will be a success if managed properly.

—The F. Kroeber Clock Co. have again issued a handsome catalogue, which they are sending to the trade. The present edition includes all the newest patterns in clocks, etc. It is composed of 208 pages and is a handsome book.

—Statements of accounts nowadays do not have the proverbial "please remit" at the bottom. The very latest fashion in these things is to have neatly printed at the bottom of each statement this neat little phrase: "Drop a check in the post office and see the receipt come back."

—A young American inventor, Hamilton V. Castner, of Brooklyn, N. Y., claims to have reduced the price of the production of aluminum to such a figure that the article will come into general use. The process of extracting the aluminum from the clay requires the employment of sodium, and sodium has cost the retail buyer \$4 per pound, the cost of production being \$1.50. Mr. Castner has directed his attention to cheapening the production of sodium, and claims that his process reduces it to 25 cents per pound.

—The Trenton Watch Company have just started in on a rushing campaign with their popular watch. Having begun to sell to retailers direct and thoroughly introduced their watch, they have now established agencies outside of Trenton for its sale. In New York Mr. J. B. Yates has charge of the eastern business, with an office at 200 Broadway, where a full stock will be kept constantly, and Francis E. Morse & Co., of Chicago, are the agents for the western part of the country. An export trade has already been begun by Mr. Yates, and with the new improvements lately added to the Trenton movement, shown in the advertisement, the "campaign" is already fairly opened.

—The Dennison Mfg. Co. are getting out their catalogue, which is now about ready to be sent to the trade. It is printed in colors in its usual excellent style, and this year shows more new patterns in jewelry cases, etc. An important addition has been made by the Dennison Mfg. Co. to this department in the introduction of a line of ready-made trays for show cases. These are made in different qualities of frames and materials and of uniform size. The catalogue gives illustrations of those kept in stock, from which any one may order as intelligently as if the goods were before them. Many little novelties are shown for the holiday trade in fancy boxes for rings, bracelets, lockets, etc. One of the newest is a line of imitation ivory cases lined with fine satin. The ivory is finished in antique style, and is ornamented with odd-looking figures. One of the most attractive of these is a ring box, peculiarly appropriate for an engagement ring. The ornament is a spider's web and a spider as natural as life. Every dealer should write for a copy of Dennison's new catalogue.

—The portrait of Mr. Royal E. Robbins, Treasurer of the American Waltham Watch Co., which has been paid for by the employees and stockholders of that company, was formally presented to the city of Waltham, Mass., on July 30, with reminiscent speechmaking, wherein the history of Waltham and Waltham's watch industry were recalled. A special meeting of the Mayor and Board of Aldermen of Waltham was held in the evening, and many persons, including ladies and friends of the watch company, attended. The portrait is on a canvas about 3½ feet wide by 4½ feet long, and is elegantly framed. The likeness is very striking, and the attitude chosen by the artist, N. Q. Collins, very natural. The entire expense of the portrait and its heavy gilded frame is \$1,300, which was paid by voluntary contributions from stockholders and employees of the company. The important part which Mr. Robbins has taken in making the city of Waltham what it is was duly recounted by the speakers, Mayor Fisher going so far as to say that "the uniform courtesy and liberality which has characterized his management (of the watch factory) has placed our city head and shoulders above every other on the face of the earth." The honor shown Mr. Robbins in the gift of this beautiful portrait is, no doubt, fully deserved, and is unprecedented in the history of watch making in this country.

—In some parts of Germany and Austria natural pumice stone has been superseded by an artificial stone, to which a suitable shape can be given and different degrees of fineness of grain obtained, which allows the stone to be used in all the industries where natural pumice stone was formerly employed. The ingredients are white sand, feldspar and fire clay, mixed in suitable proportions to obtain the desired composition, and the paste is poured into plaster molds, being finally placed in fire clay receptacles and baked in ovens.

—And now a "horological school" has been incorporated in Illinois, and the announcement is made that the Chicago Horological School will open about October 15. The incorporators of this school are Messrs. Urban W. Frink, Charles Goodheim and O. C. Jaquith, well known to the trade in Chicago, and every confidence is reposed in these gentlemen to establish a thoroughly practical school to teach this art to all comers. Attention is called to the announcement of the opening of this school, to be found in our advertising pages.

—A good story is told at the expense of a traveler for a well-known silverware house, by a gentleman connected with a large firm downtown. The traveler was sent on a trip through New Jersey by the manager of the silverware house, who was not held in high esteem by the salesman. Trade in New Jersey was very poor indeed, and the knight of the sample trunk found life very dull. So one day he took it into his head to take a run into New York City to have a good time over night. Of course, this was against the rules of his concern, and he knew that if he were seen by the manager, whom we will call De Jones, the weather in New York would prove rather hot for him. He came to the city and sought out his friend, the gentleman who relates the story. They went to the theatre and spent a very pleasant evening together at the hotel where the traveler had put up for the night. His friend had meanwhile been cautioned to keep quiet about his being in town, as he dreaded to have De Jones find him out. The next morning bright and early the salesman is awakened by a sharp knock at his door, and a voice, which sounds like that of one of the little Irish hall boys employed in the hotel, says that Mr. De Jones wishes to see him. He almost falls into a swoon, but being a traveling man and accustomed to all kinds of terrible experiences, he tries to make the best of the situation. He hurriedly dresses, and in an excited tone tells the supposed hall boy to send Mr. De Jones right up. Pretty soon he hears footsteps in the hall, and then he hears a voice say: "Step roight this way Misther De Jaunes, this is the room, number 74." Then a sharp knock at the door, and he opens it with his face about a mile long, expecting to see his dreaded manager. Instead of De Jones it is his friend of the night before, who imitated the Irish hall boy to perfection. His surprise and indignation, quickly overcome by perfect good feeling and congratulations, are better imagined than told.

NEW CRESCENT WATCH CASE.

The Crescent Watch Case Co. has just published a new design in 18 size cases, of which an illustration is shown herewith. It will be ready for the market early in October. The novel feature of this case is the peculiar style of border and center. The border is a fancy millefleurs in the same rich, heavy chased style which characterizes the filled cases of the Crescent make. This pattern is entirely original with this company. A few cases have been privately exhibited, and meet with great satisfaction and it is thought that this new design will have a long run.





VOLUME XIX.

NEW YORK, NOVEMBER, 1888.

No. 10.

THE JEWELERS' CIRCULAR

AND

HOROLOGICAL REVIEW.

OFFICIAL REPRESENTATIVE OF THE JEWELERS' LEAGUE, THE NEW YORK JEWELERS' BOARD OF TRADE, AND THE JEWELERS' SECURITY ALLIANCE.

It is also the Recognized Exponent of Trade Interests.

A MONTHLY JOURNAL DEVOTED TO THE INTERESTS OF WATCHMAKERS JEWELERS, SILVERSMITHS, ELECTRO-PLATE MANUFACTURERS, AND THOSE ENGAGED IN THE KINDRED BRANCHES OF ART INDUSTRY.

SUBSCRIPTION.—To all parts of the United States and Canada, **\$2.00 per Annum**, Postage Paid. To all Foreign Countries, **\$3.00 per Annum**, Prepaid.

All communications should be addressed to

SETH W. HALE, PRES'T,
THE JEWELERS' CIRCULAR PUBLISHING CO.,
189 BROADWAY, NEW YORK.

Advertising rates made known on application.



A full Index to Advertisements and Table of Contents will be found on Page 5 of this issue.

ON OTHER pages of this issue of THE CIRCULAR we present illustrations of the phonograph and the phonograph-graphophone, those wonderful instruments just being introduced for recording and reproducing speech. They have been on exhibition for a number of weeks and have attracted the liveliest curiosity and interest. Either instrument will produce with the utmost accuracy any sound that is conveyed into the receiver, and is thus made to talk, whistle, sing, play any instrument, or bring forth immediately, or at any future time, whatever may have been placed upon the cylinder, by means of the receiver. An amusing thing happened in connection with one of them a day or two since. A gentleman called upon a jeweler in the Lane and invited him to go somewhere with him. The jeweler excused himself on the ground that he had so many letters to write. "Why don't you get a machine to do this work for you?" said his friend. The jeweler laughed at the idea, but was finally persuaded to go and see the phonograph. On the way they picked up another member of the trade, and on reaching the rooms where the instruments are shown, found quite a crowd of curious persons watching and listening to it. They heard it talked to and

heard it repeat everything that was said to it, and also heard it sing songs that had been delivered to it weeks before; heard it play a cornet solo, and give recitations, and finally one of them said: "Can this instrument talk French?" The operator smiled as he replied: "I have never tried it; you come and talk to it." So the jeweler approached the receiver and talked into it a long message in French to his brother who is abroad. His delight can scarcely be imagined when the instrument reproduced his message, with every accent and intonation precisely as he had given it. Then he talked German to it, and the same result followed. As these instruments will reproduce any sound whatever that goes into them, it makes no difference whether one talks English, French or Volapük, whether the sound is produced by a shrieking locomotive or a Jersey mosquito, the reproduction is identical with the original sound. The jewelers were delighted with the instrument, and will be among the first to secure them when they are ready for delivery.

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THERE is no class in the community that more needs insurance against accidents than commercial travelers. They are constantly traveling by railroads and by steamboats, and are exposed to all the perils attending such travel as well as those to which the ordinary citizen is exposed in his daily walks. These have become so great in recent years that thousands of business men who seldom travel, carry insurance upon their lives especially providing indemnity for them in case of accidents occurring to them. It has been said that there is as much peril to be encountered in crossing Broadway as there is in crossing the Atlantic, which is substantially true in these days, when the drivers of loaded vehicles evidently believe that pedestrians have no rights that they are bound to respect. Other cities have also introduced all the modern perils to life, so that one does not know at what moment he may be blown up by some boiler concealed beneath the pavement, or garroted by some electric light wire left hanging over the street. Indeed, it is impossible to mention all the dangers that environ the ordinary pedestrian in our cities, and those are prudent men who insure against them. Add to the city perils those that are peculiar to constant travelers, and the necessity for accident insurance for traveling men becomes apparent. This kind of insurance is comparatively new, but has attained wonderful popularity in the past few years. At first it was costly, and the expense deterred many from accepting it, but since the development of the assessment or co-operative principle to insurance—which is simply an adaptation of the mutual plan of fire insurance—accident insurance has become cheaper, and per consequence, more general. One of the most successful of the accident companies is the United States Mutual, of which Mr. James R. Pitcher was the organizer and the active manager. Mr. Charles B. Peet, of Rogers, Peet & Co. is the president, and gives much of his time to the affairs of the company. Mr. Pitcher was formerly a commercial traveler himself, and the formation of this company grew out of the necessity he

saw that such travelers should be insured against accidents. He had been in some railroad smash-ups himself and knew how it felt to have his life in peril and to feel, at the same time, that if he were killed or crippled his family would have little to rely upon to carry them through their troubles. The United States now has more accident insurance on the lives of commercial travelers than all the other accident societies combined, and the reason for this is that the company does business on a liberal basis, and pays all claims promptly and in full. An accident policy in this company, costing \$15.00 a year, insures the holder for \$5,000 if he is killed by an accident, and provides indemnity to the amount of \$25.00 a week for fifty-two weeks in case he is disabled by an accident. When a man has lost a hand and a foot, or both hands or both feet, he is not of much further use as a man, and so the United States treats such injuries as total and permanent disabilities, and pays for them the same amount that it would if the man had been killed. For the loss of one hand or one foot or both eyes, it pays half as much as for a death, and is proportionately liberal in regard to other injuries. The cost is paid by assessments of \$2.00 each, called for at intervals of about fifty days, and \$1.00 for expenses per annum, although the payment of \$15.00 keeps one insured for about a year without the annoyance of looking after assessments. Every traveling man should have a policy in this company; he can insure to the extent of \$10,000 if he chooses, but a policy for some amount is as much a necessity to the traveler as a fire insurance policy is to a manufacturer.

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WE HAVE been shown a circular issued by a comparatively unknown trade paper wherein it quotes figures taken from one of the so-called newspaper directories to show that it has a larger circulation than any other paper in the same line of trade. The figures given were, we positively know, erroneous, and we also know that so far as trade papers are concerned, the information in the directory alluded to is wholly untrustworthy. THE CIRCULAR was asked to furnish information for the directory regarding its business affairs, but declined to do so on the ground that we were not seeking patronage from the general public and that, consequently the general public would take no interest in our business. Other trade papers take the same view, and whatever alleged information any of these directories pretend to give regarding THE CIRCULAR and many other class journals, is purely guesswork on the part of the compilers, and wholly erroneous. In the course of our experience with these directories, we have found that if we were willing to comply with their terms, we would be at liberty to state our circulation at any figure we pleased, while if we refused to do so, they would report it at any figure they pleased. Having thus ascertained that their reports were not in any sense in the nature of a commercial rating, we have declined to have any dealings with them, leaving others to patronize them to the extent that they deem necessary to bolster up their reputations. So far as THE CIRCULAR is concerned, we have never claimed an enormous circulation; we do not cater to the outside public, and only desire subscriptions within the trade; this necessarily limits our field, but that has enabled us during the past twenty years to work that for all it is worth, and we claim that we cover it better than any other journal in the trade. That is the essential point with our advertising patrons; they want their announcements to reach the trade, and not the general public, and THE CIRCULAR goes to pretty nearly all dealers in the trade. Of this our patrons can satisfy themselves by inquiring among their customers, and their traveling men can tell them whether or not they encounter our journal frequently in the hands of those whom they visit. Whatever value there may be to the figures of the newspaper directories as regards the daily press, they certainly have none whatever as regards trade papers, for the simple fact that they are the result of guesswork almost entirely.

WE HAVE received a circular issued by the Society for the Encouragement of Arts, Manufactures and Commerce, of London, of which the Prince of Wales is president, offering a series of prizes to art workmen. The prizes are to be given to the workmen only who produce with their own hands the examples of work specified, and the competition is open to men and women. The work called for may be either copies of existing works, modifications of existing works or original work. The industries invited to compete for the prizes are potters, including decorators, stone carvers wrought iron workers, and gold and silversmiths, the prizes for the latter being offered by the Goldsmiths' Company. In this class the examples called for are a cup or sugar basin of beaten silver, chased or otherwise, and a pendant, brooch or locket of gold without gems. The prizes in each competition are \$100 for first and \$25 for second best. This society was founded in 1754, and has done much to stimulate the enterprise of art manufactures. Its members are nearly all titled persons who take an interest in art matters.

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ONE OF the disadvantages of obtaining a patent for a new invention lies in the fact that the inventor is obliged to furnish to the government examiner a full and accurate description of his invention, and this is afterwards published. Anyone desiring to use the device patented can obtain this description, and frequently, by making some slight and immaterial change, is able to reproduce substantially the same thing but with sufficient variation to escape prosecution for infringement. Many inventors, who are unwilling to thus give away the secrets of their inventions, adopt the plan of simply filing an application for a patent, which protects them for four years. They are not required to give an accurate description of their methods of arriving at the result, and no one could duplicate the work from the application. Trade secrets are often valuable only so long as they are secret, and their publication only tempts unscrupulous persons to steal the fruits of their genius and labor. The jewelry trade suffers almost as much as any other from the patent pirates, and any means by which they can be circumvented should be known

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AS THIS paragraph is written, the presidential canvas is at white heat, but by the time it is printed the election will be but a few days off. Seldom have the business men of the country been worked up to such a degree of interest in a presidential contest as they have in this. It has been essentially a campaign of principle, in which personal attacks upon the character of the candidates have played no important part, as in past contests. The issue has been clearly drawn between protectionists and free traders, and this is of such vital importance to the industries and the commerce of the country that everyone seems to have been forced to take sides with one party or the other. The Republican party has stood as the representative of protection to American industries, and, whether rightfully or not succeeded in placing the Democrats before the country as champions of free trade. Upon this issue clubs of business men were organized by both parties, and the commercial and industrial elements cut an important figure in meetings, parades, etc. The dry goods men organized a Republican club and opened headquarters in the heart of the dry goods district, where meetings were held daily and harangued by full-voiced speakers. Singing of campaign songs was an important feature of these meetings, and the roar of voices lifted up in the rendition of songs written for the campaign, could be heard for blocks away. The Democrats were scarcely behind their rivals, but held meetings that seemed to lack nothing but adjournments. The jewelers took their full share of the enthusiasm, and formed their clubs for and against free trade, spoke, sang and marched with all the energy of professional politicians for a time, and seemed to enjoy it. In a few days we shall know the result, and, as THE CIR

CULAR is thoroughly neutral in politics, we extend, in advance of receiving the returns, our congratulations to everybody, and to assure each and every individual who worked so hard for the success of the ticket that wins that but for his personal exertions defeat would have been surely its fate. This recommendation ought to be worth a good fat office to anyone who presents it to the next president.

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NOW THAT the election is so nearly settled, it is time to get back to business. There is a vast country lying about us that has been actually suffering for jewelers' goods while we have been campaigning, and accumulated orders must be attended to. The great West and Northwest are positively desolate for want of goods of all kinds, and dealers sit at the cross-roads eagerly watching for travelers for the jewelry houses. None of the factories shut down during the excitement, but kept right along making novelties for the fall and holiday trade, and a few weeks now devoted to selling them will satisfy the crying demands of the country and stock up the dealers who have neglected to make their purchases during the pendency of the election excitement. But it is all right now, the country is safe, and will proceed right along in its prosperous career, and wise men will get on board the train at the earliest opportunity. There is every reason to expect a good fall trade, and the manufacturers generally are prepared for it. A rich display of new and attractive goods can be seen in any of the establishments of this city, and buyers should get in their orders as soon as possible before the stocks have been culled over. Unless the predictions of men who have kept a keen watch of the situation fail, like those of the weather bureau, the jewelry trade will be kept busy from now till Christmas.

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SOME very fine effects in fancy goods are being secured by the use of various colored leather, which, like Russia leather, is now manufactured in this country more extensively than anywhere else. It used to be thought that the Thebans possessed the secret of coloring leather so exclusively as to give them almost a monopoly of its production, but Americans have discovered the art for themselves, and now all sorts of fancy goods, made with colored leather, are exported to all parts of the world, including the countries from which we used to purchase it. No limit can be placed upon the inventive faculties of Yankees, especially when they see a good trade at the end of it. The same is true of brass goods as of leather. The rage for fancy work in brass had its origin abroad, but our brass workers have so improved upon their teachers, that a large export trade in ornamental brass goods has been developed. A very handsome ornamented brass table with onyx top, recently sent abroad, has excited considerable comment in art journals because of its beauty and fine workmanship. Three swans are gracefully grouped to form the base, and a slender spiral wire extending above their outstretched wings, supports the onyx slab, outside of which is light open work over blue plush. It was a delicate and attractive piece of work, made by an American from his own designs.

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THE SUMMER having passed and pretty much everybody having had his "outing" in some shape, we would like to ask those who took their families, or went by themselves, to the mountain resorts or the seaside, how much they gained by it either in comfort, health or economy? Situated, as New York is, between two magnificent rivers, with the bay at her feet and the ocean near enough to supply fresh, wholesome air, it would ordinarily be regarded as a health and pleasure resort in itself. But the fashion has grown up that New Yorkers must, from necessity, go away from their comfortable homes during the months when they most need all the

comforts they can get, and coop themselves up in some little seven-by-nine bedroom at some fashionable place where every recognized law of health is studiously avoided. If one lives in the crowded business streets, where the air is excluded by the construction of the buildings, a change during the hot weather would be necessary; but comparatively few business men live in these localities. Anywhere above Fortieth street it is possible to secure fine, healthy residences, to which all modern improvements in construction have been added, which are infinitely superior in comfort and healthfulness to anything to be found at the summer resorts, and at much less cost. But New Yorkers are not limited to the city for their places of residence. Within a radius of twenty miles of the City Hall are some of the most delightful suburbs, combining all the conveniences of city life with actual country residence. These places are populated by sensible city men, who find it quite as convenient to come back and forth daily as it is to get to the upper part of the city by elevated railroad. They are content to remain the year round in their comfortable homes rather than tempt the uncertainties and known discomforts of the summer resorts. They find a freedom and comfort in their own homes that it is impossible to acquire in any hotel, and they are free from the extortions of the horde of money grabbers that infest the watering places, from the bootblack to the landlord. Those who go to these places generally return enervated by some insidious disease, due to lack of sanitary precautions, contracted during their hot weather vacations, and wonder why they received no benefit from it. Those who have adopted suburban residences are the wise ones, and among them we could mention many identified with the jewelry trade. They take their little family excursions during the hot weather, but are sure to get back to their own comfortable homes to sleep. Living in these suburban places is more economical than in the city, while the charges of the summer hotels is highway robbery compared to the cost in the beautiful suburbs. We are impelled to these remarks by recently listening to the wail of one of those in the trade who spent the summer with his family at the seaside, and who has been actively engaged ever since their return in paying doctors' bills. Personally he laid in a stock of malaria that bids fair to last him several years. He is now looking for a place to buy over in New Jersey.

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RICH and elaborately decorated heads for umbrellas, canes, riding whips, etc., are now the rule, umbrellas for ladies being made of a length that enables them to use them as walking sticks, and very tastefully and dressy they look. The decoration of this class of goods has virtually created a new industry, which consists in covering the natural wood, or other material constituting the handle, with silver and then chemically removing such portions of the metal as may be necessary, and afterwards decorating the remainder. Buck horn so treated appears with a silver head conforming to all the inequalities of the horn, and canes made from the roots of trees, having an unique formation, are covered in the same way, after which the metal is eaten away so as to permit the natural wood to appear at intervals. Ivory so treated makes a very beautiful head. The heavier the head the better it suits some customers, and the general demand is for large heads, to both umbrellas and canes. The prices for them vary according to the material and workmanship, umbrellas costing from \$5 to \$50 and canes proportionately. Riding whips for both ladies and gentlemen are similarly decorated, making very handsome and desirable articles. These goods should be found in the stock of every dealer who expects to keep control of the trade of his locality that legitimately belongs to him. If customers find them in the dry goods stores and not in the jewelers', they will be tempted to buy jewelry there also, for many of the dry goods and fancy stores carry stocks of these for the express purpose of tempting ladies to patronize them. Dealers in jewelry should keep a supply of everything that pertains to their business, and so leave no opportunity for

outsiders to encroach upon their preserves. Whatever is of kin to the jewelry trade should be found in the jewelry stores, more especially if it comprises any example of art work in gold and silver, as the goods we have alluded to do in a marked degree.

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THE YELLOW fever scourge has inflicted a blow upon the business prospects of Florida that the state will not recover from in a number of years. Seldom has the dread disease raged with greater fury or been attended with more fatal results, than have marked its course this year in Florida. Hundreds of deaths have occurred, and, notwithstanding the vigorous quarantine, it was carried by refugees to other localities, creating consternation among the residents. Business in Florida was prostrated, and so great has been the alarm created, that serious results to business have followed in other southern states. Not until heavy frosts visit the stricken district can the ravages of the disease be stopped. The worst ravages of fever were at Jacksonville, where the number of cases ran from fifty to over one hundred a day, a large proportion of which were fatal. The city became one great hospital, and appeals for help were made to the country in general. These were nobly responded to, and money, medicines, nurses, and other necessities were poured in upon them in unstinted quantities. The jewelry trade responded with the greatest liberality, as it is in the habit of doing in such emergencies, and their contributions were forwarded early, when they were most needed. The sympathy of the trade goes out most warmly to their brethren in the south who have suffered so severely from this unexpected outbreak of a disease so much to be dreaded.

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THE STREET "fakirs" have been doing an extraordinarily large business this season in campaign badges, and so great has been the demand for them that nearly every person one meets wears upon the lapel of his coat a metal or ribbon badge indicating his political preferences in the presidential campaign. Many ladies also show their colors, and wear their badges in the streets. A number of manufacturing jewelers made a good thing in happening to hit upon designs that became popular. It is an ill wind that blows good to nobody, and if trade in general suffered because of the political excitement, these fortunate manufacturers made a profit out of it.

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IT IS stated that the stocks in the hands of retail dealers have been allowed to run down unusually low during the past summer, and it is expected that when they commence buying they will give orders liberally. The country generally is in a prosperous condition, crops have been abundant, and prices for agricultural products unusually high, so that the producers have realized handsomely on their summer's work. When their leisure time comes, it is natural to expect that they will spend their money freely, and dealers are anticipating such a state of things. Those who watch business conditions closely, predict that the fall trade will be excellent, continuing up to the holidays without interruption. That will suit the manufacturers, who are prepared to show more novelties this year than in a long time before.

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THE SUBJECT of artistic window dressing, originally taken up in THE CIRCULAR, has excited much attention, and has brought forth many communications from dealers who desire to make their stores as attractive as possible. There is little to add on this subject to what we have already said, and if our correspondents will turn to their files of THE CIRCULAR, they will find the topic very fully discussed by ourselves and our contributors. But window dressing,

while important, is not the only essential in making a store attractive. The cases and shelves should correspond with the attractive window, and the goods contained therein be arranged in such manner that every article will show for what it is worth. A glance at the arrangement of goods in the store of the Gorham Manufacturing Company, for instance, will serve to illustrate our meaning. Here the goods are placed in elegant cases in a manner to show their strong points to the best advantage, and each class of goods is kept by itself. The solid silverware, with its exquisite workmanship, is kept in a department by itself, and not mixed in with plated ware or goods of low price; presentation sets of table furniture are displayed in another department, arranged with equally good taste, but not placed in contact with those fine examples of artistic workmanship that are to be seen in the larger silver pieces. Everything on exhibition is classified according to its merit and worth, the goods not being pitched together promiscuously in their cases, as if shovelled in with a barn shovel. There is a harmony in every case, no matter how small or trifling the goods may be apparently, but even the cheapest is placed so as to show what it is in the most attractive manner. Another essential in a jewelry store is perfect courtesy on the part of every employee towards every person who enters, and the manifestation of a desire to aid the possible customer in every way. Many persons do not know just what to ask for when they visit a store well stocked with captivating goods, and it should be the duty of a salesman to help them in their difficulty. The bazaar clerks are noted for their entire indifference to customers; if a customer happens to ask in one department for something that is kept in another, no effort is made to direct him to the right place, but the salesman or "saleslady" will stare at him with that inane expression that is habitually found in the bazaars. A salesman who consults his employers' interests as well as his own, will always seek to interest a caller, whether he makes a sale or not. Many stores in this city are virtually art museums, and the writer has spent many a pleasant hour strolling through them. He has also noted the different treatment he has met with in different places. In some the persons in waiting seemed to regard him as an intruder whom it was not worth while to seek to interest, while in others he has received every possible courtesy, notwithstanding his declaration that he did not wish to purchase anything. They took pleasure in showing the goods of their employers, and explaining whatever needed explanation. Such persons make friends for the house that employs them, and the visitor who has had his visit made pleasant is sure to remember the place and return when he has money to spend. A short, curt manner is always offensive, and while the person indulging in it may think it a good way to assert his independence, it drives away customers and brings the place into disrepute. While store decoration is an important matter, one that no dealer who hopes to be successful can afford to overlook, politeness and a spirit of accommodation are essentials that cannot be dispensed with. We have heard the cheap and impudent sales girls at Macy's talk to ladies in a manner that should have brought them a sound box on the ear, and would have ensured their prompt discharge had the head of the house known of it, but customers are loath to complain, and clerks indulge their impudence unchecked. The reverse of this should be the rule in every respectable house, and we believe it is in most of the jewelers' stores, although there is an occasional place where a few lessons in politeness are very much needed.

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A FEW years ago cameos and intaglios were all the fashion, and then they suddenly, and without any apparent cause, became unpopular. Some dealers were caught with large stocks of them on hand, which they could not dispose of at any price, and they were thrown about their stores like rubbish; they had cost too much to throw away, and were not worth taking care of. Now cameos and intaglios are coming into fashion again, both here and abroad, and the recently despised goods now have their former value. Well they

may, for some of them are real gems of art, stones of beauty exquisitely carved, full of light and beauty. The art of cameo cutting, while extremely old, has been improved upon by modern artists, and was at the height of its perfection when fashion placed her ban upon its products. We are aware that fabulous prices have been paid for works of the old masters of this art, and that it has been claimed that they excelled in it, but modern methods and modern artists had so advanced in the art of cameo cutting that their finest works were unequalled. It is a good thing to know that true lovers of art have declared in favor of restoring these goods to popularity, and that the demand for them is on the increase. But the Secretary of the Treasury apparently does not know the value of goods of this class for in July last he issued an order to the effect that cameos, intaglios, onyx, agates, etc., did not come within the classification as precious stones, and must pay a higher rate of duty. Dealers in this city protested, but he adhered to his decision. The principal importers, therefore, prepared a memorial addressed to the secretary, in which they declared that, in their opinion "onyx cameos, sard intaglios, sard onyx, agates, crocidolites, etc., cut, polished, and prepared for use in jewelry, are, as they always have been, properly in the category of precious stones." A committee, consisting of Messrs. Rothschild and Block, was appointed to present this memorial to the Secretary, and they did so. They were well received, and assured that the matter should receive the consideration of the department. It is confidently believed that the Secretary will revoke his order of July. It would be rather hard if the government should interpose to injure the new demand that has sprung up for this class of goods.

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A CERTIFICATE of membership in the Jewelers' Security Alliance is the very best protection a jewelry store can have against burglars. Private watchmen are liable to sleep at their posts, burglar alarms may get out of order, the regular police are always "around the corner" when an emergency arises when they might be of service, but the certificate of membership is always conspicuously displayed, day and night, and serves as a notification in advance to the burglars who are looking around for "a crib to crack," that if they attempt their game on that particular store, they will be hunted to the bitter end by the Alliance. The burglar fraternity knows by bitter experience what that means, for several of their number are serving time in state prisons that they would have escaped had not the Alliance been interested in their conviction. All the cost of hunting down burglars who rob members is borne by the Alliance, as is also the cost of prosecution, so that the dealer who has been robbed is not put to one dollar of expense. Membership costs so little that no dealer can afford to be without a certificate. This fact is pretty well appreciated now, for a large number of dealers have enrolled themselves recently, but the Alliance desires to extend its protection to every dealer in the land. No one can say whose turn to be robbed it will be next, so the only safe way is to be prepared all the time.

THE PAYMENT OF MONEY.—A man to whom payment is made is not bound, under ordinary circumstances, to give a receipt or to make change. A payment made to the proper person, in lawful money of the United States, is indisputably good. By an act of Congress the payment of debts with coin is regulated as follows: All gold coins and the silver dollar, at their respective values for any amount. The half-dollar, quarter-dollar, dime and half-dime at their respective values, for debts under \$5. Three cent pieces for debts of any amount under 30 cents. One cent pieces for debts of any amount under 10 cents.

Old Ways versus The New.

By W. F. FOSTER, *Waltham, Mass.*



HERE is nothing which strikes the modern watchmaker more forcibly on casual visits to so-called "watchmakers," than a careful inspection and observation of the tools and methods employed by the average workman. The general public, especially in a manufacturing community, do not fail to notice the benches, tools, and general surroundings of these "watchmakers" of their acquaintance, and to compare them with workmen in other callings. These comparisons are nearly always unfavorable to the "watchmakers." What would one think to see the modern soldier armed with the flint-lock musket of 1776? Just what a discriminating public must think of the average watchmaker of 1888, equipped with the tools of his ancestors. Let us step into one of these shops and observe the workman and his tools. First we notice his bench or shelf, ten to fourteen inches wide and about one inch in thickness, and of no particular height from the floor. On one side his most important tool is a vise, of the old blacksmith pattern. This vise usually has a block, or anvil attached, on which to rivet a pin-stem or stretch a wheel, or end-shake a train. In fact, the addition of a few questionable punches, and a vise-block filled with holes, constitutes his "staking tool." A bit of ivory or boxwood sometimes attached with a chain to the vise, is his filing fixture. When his vise is in no other use, the corner of his small bench-drawer, if he possesses one, is used to file on. The kingpin to his outfit is the truly wonderful Jacot lathe, or better known as the "fiddle-bow lathe," though why it was ever called a "lathe" is hard to tell.

With this relic of a bygone age the ancient workman, armed with a few double cut drills, arbors and collets, a couple of bastard-cut files, scrubbing brushes, chalk, pliers, and a good, generous hammer, poses before a lenient and long-suffering public as a skilled watchmaker. His very numerous "kit" is not arranged in any order, but is well mixed up with soldering acid bottle, pin-stems, pin-drops, and other articles of the back-shop. Several clocks in different stages of disease, a few watches, some movements, partly dissected, are carefully covered with a varied assortment of broken goblets. Where is the owner of this ancient outfit? Oh, here he is. He has just been telling a customer that the watch left for repairs has been in the hands of some "botch," and that the balance, an expansion, was broken in two places, and must be soldered; also, that the hair spring has been "buggered" and has a great kink in the end of the outer coil. Does he have a smart, workmanlike appearance? Well, no. His thick mat of hair is not just tidy, neither is his week's growth of beard, or his old shop-coat out at the elbows. His slouching gait and distrustful look add to his attractiveness. He slinks on to his high stool, which has already made him round shouldered and week-chested, and proceeds to "rip" to pieces a fine Swiss repeater for a pivot to balance and cleaning.

Have I overdrawn the picture? Have you not all seen him and his shop? Still there are other shops where some slight improvements are to be seen. Let us also enter one of these. Here we see a small Swiss or a Bottum lathe with its small spool for a driving cone, the motive power of which is a sewing machine wheel or something similar, belted direct with a cotton cord, as there are no attachments to this lathe. Cement holds everything here. There is no improvement in style of bench, though a marked difference in the number and even variety of tools, but still no attempt at order. Everything here, as in the former shop, is well mixed, and the bench looks more like that of an overworked gunsmith than that of an expert watchmaker. This shop fairly represents the great majority of shops all over this country. Is it any wonder then that "watch-

makers" and "jewelers" are losing prestige, as compared with the higher craftsmen in other callings?

There is hardly one shop in a thousand where we find a change so marked that we feel it the moment we enter. Here, for instance, are solid cabinet benches, filled with drawers, and not one too many, especially the "skin drawer." These benches are not less than twenty-four inches wide, and of two inch stock, and by about four feet in length, of highly finished cherry, walnut or oak. Let us examine a bench of this description more closely. On the bench is an American lathe with its countershaft, the black rubber trimmings making a fine contrast to the beautifully nickeled surfaces. Opening a small door at the left side of the bench we see a large driving wheel of about 22 inches in diameter, and weighing not less than 35 or 40 pounds, belted to countershaft with half-inch flat belt. This countershaft is not for show, but is for using the numerous attachments which make the American lathe complete. Near the lathe is a glass-covered chuck stand with a complete set of split and compound chucks. Near by is a fine staking tool, which is almost a part of the lathe. At the other end of the bench is a Steven's vise with its shoe which does not obstruct the use of the drawers below. This is also highly finished and nickeled. Besides the vise, in orderly array, are seen the various sized hammers, files of all sizes and styles, each and every one with its ebony handle. Numerous pliers, screw drivers (these are *not* ground like cold chisels), and, in fact, an almost endless variety of small tools, but not a useless one among them, and every one the best in style and finish to be had. In the center of this bench, coming to the front edge, is a piece of quarter-inch plate glass, one foot square, with beveled edges, and having a white paper beneath.

This is the bench of the modern, expert watchmaker or jeweler, whom you will imagine seated in front of it with his neat shop-coat and trim, workman-like appearance, inspiring complete confidence at once. He it is who can make you a watch complete, and as you see him sitting erect in his straight-backed low chair, your first wonder is how he can work at a bench which comes nearly to his shoulders, but as you watch every motion and see how sure and quick they are your wonder gives way to admiration, and you wish that you were a modern watchmaker yourself. This workman can cut a bevel pinion or a club-foot scape-wheel if necessary, or open or even make a jewel for you. He is thoroughly skilled in all adjustments, such as temperatures, isochronism on positions, and can guarantee the rate of any watch he may so adjust. In fact, he is a *Watchmaker* not in name only but by actual experience and education. While every one who leaves a valuable watch with him feels confident in his ability and is willing to pay such a man even double what he would "the fiddle-bow man." Need we ask what gives him the advantages which he possesses over his friend of the "fiddle-bow?" It is not only his conformity to the advanced ideas of the times, but his careful study of the requirements of his "profession," for it can no longer be called a "trade," embracing as it now does the branches of several arts and sciences, such as optics, engraving, electro-magnetism, plating, etc., metallurgy, mineralogy and mechanics. These he must be informed of at least so far as they in any way can or do relate to his business. While on the other hand his mechanical tools for doing his great variety of work are as perfect as the highest skill and ingenuity can furnish. Now what we want to emulate, or continue, are not the methods of our ancestors—methods which are still being pushed or dragged into the print at this late date, but to try and bring up the young men of our profession, or calling, to a level in skill and education with the best to be found in others, thereby earning that respect and confidence which the general public is always ready to give to such.

This high standing in the business and in the community can only be obtained, as aforesaid, by a careful and practical study and application of all the details and principles connected therewith. Have neat and tidy workshops with each class of watchwork, jewelry, clockwork, engraving, plating, etc., under its own special department,

and for each a perfect set of the best modern tools. Discard the obsolete "fiddle-bow," and other toys of childhood, and possess an American lathe of some standard pattern or make and learn to become an expert in its use. This is the only way to keep up with the procession; therefore, the best possible method for beginners is to learn only from men having modern tools and skilled in their use. Don't be in a hurry to start for yourselves, young men, but when you have served the required time in the job shop, get a position if possible in some of the leading watch factories, not as a permanent thing, however, as many do, but for the experience you will gain which will be of such great importance to you when you come to commence business for yourselves. The most desirable situations to be preferred to this end are those in the springing, finishing or adjusting rooms, springing to be preferred. Keep both eyes open here and you will learn in a year's time certain excellent and practical methods that will take out any and all "job shop conceit," that would otherwise have proved a hinderance if not a fatality to you in the highest and broadest demands of your business. If you are observing and make notes of the knowledge you have here gained and apply it, you cannot help attaining a success as a workman, provided always of course, that you have the in-born aptness for your special calling to start with.

Aluminum and Magnesium.



THE PROGRESS which has been made within the past year or two in the metallurgy of aluminum and magnesium may be estimated by the remarkable reduction in their price—aluminum from about \$20 per pound to its present wholesale price of about \$4 per pound, and magnesium from about \$40 per pound also to \$4.

In the case of aluminum the reduction in the price of the pure metal has been due to the reduction in the cost of making sodium by the Castner and similar modifications of the old Deville process, and to a semi-electrical method in use in some of the European works. The chief uses of aluminum are in the forms of alloys, in which form the Cowles electric process, which reduces alumina in the electric arc with copper, forming an alloy which is sold in ingots containing accurately any desired percentage of aluminum, has reduced the cost of this metal to a lower point than is possible by any of the methods which make it through sodium.

Moreover, the Cowles process has for some time past been producing these alloys in large quantities and of remarkably high strength and elasticity, as has been amply shown in the tests made on the United States testing machine at Watertown, Mass., and in English works.*

The properties developed in these alloys seem to adapt them specially for such uses as propellor blades, gun castings, torpedo tubes and parts of machinery exposed to unusually heavy work, and to pump barrels, screen mesh and other applications where incorrodibility as well as strength is requisite. It seems probable that aluminum alloys are destined to replace steel in many of these as well as other important uses, so that the metal in this form appears to have made a wide and important market.

Either pure or as an alloy of iron it is also receiving quite an extended application in casting steel in the manner and for the purpose in which it is used in making miter castings of wrought iron; that is, to lower the fusing point of the alloy and thus secure greater fluidity at any temperature above that point, and also for removing oxygen from the molten metal. It is difficult to say how extensive this use has become, but it is known to have been adopted recently in several important steel castings.

Pure aluminum has not yet received extensive application, owing chiefly to its comparatively high price; but the recent reduction in

* See *Engineering and Mining Journal*, June 30th, 1888, page 476.

this, and the probability that at an early day it will be produced at a far lower cost by methods now under test, makes its extensive adoption in the near future almost assured.

Magnesium in many respects does not promise as wide application in the future as does aluminum. It oxidizes too readily to be well suited for the chief uses where its low specific gravity would make it desirable, and it alloys with but few metals in a commercially useful form. Nevertheless the trade in magnesium has increased fourfold within the past six months, owing to so apparently insignificant a cause as its extensive introduction into photography, where it is employed to produce a brilliant illumination for taking photographs at night, or in mines and caves. Some efforts have been made also to alloy it with other metals, but its exceedingly low fusing point (about 770° F.) renders this extremely difficult, and several violent explosions attended the experiments. The only successful result was with nickel, which an admixture of from three to five per cent. of magnesium renders homogeneous and dense, the latter quality being especially remarkable, as nickel and its alloys are very frequently more or less porous.

The extreme lightness of magnesium, its specific gravity being only 1.75 as against 2.6 in the case of aluminum, makes it the most desirable metal known for optical instruments, from which its use is prevented only by its cost, which is now about \$4.00 per pound. It is also more durable than aluminum in situations where it is exposed to the influence of alkalis, which attack it much less readily. But its easy fusibility and oxidation will never permit it to become a rival to aluminum.

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THE first death in this association, after the lapse of two years, is that of Elbert E. Wadsworth, late of No. 14 John street, New York City, the holder of certificate No. 37, thus breaking a wonderful record of health in a body of selected men now aggregating nearly six hundred.

It is of interest to the trade to note the amount which the first certificate will realize ; it was for \$4,000 ; the proportion which that sum bears to the largest certificates written (viz : \$5,000), or four-fifths, is the portion of the death loss fund which Mr. Wadsworth's beneficiary will be paid, or approximately \$1,450.00. This for so young a society is an exhibit of the benefits of membership therein for which its officers and members may properly indulge in self-gratulation. His widow is the beneficiary.

During the past month the following have been added to the membership roll : Daniel Low, Salem, Mass. ; Anton G. Hodenpyl, Grand Rapids, Mich. ; and of New York City, John L. Mathey, Auguste G. Mathey and Fritz H. Mathez, of Mathey Bros., Mathez & Co. ; David B. Young and Fred T. Ward, with Cox & Sedgwick Mfg. Co. ;

Fred. J. Rahsskopff ; Adolph Bechtold ; Alfred Motschman ; Fred. W. Barthmann ; F. W. Keutgen, with C. W. Schumann & Sons ; W. J. Smith, with J. T. Scott & Co. ; W. H. Brown, with W. G. Clark & Co. ; W. L. Supple, with M. B. Bryant & Co. ; R. G. Molloy and W. H. Beales, with D. W. Granbery & Co. ; Alfred Seebeck ; Louis Stirn ; C. M. Vaslet, with Fanning & Potter ; John Schoerner ; John Schleicher ; Herman Ziegler, with F. W. Gesswein ; David N. Smith, of Wm. Smith & Co. ; John L. Rosenweig, with Jacob Rosenweig ; Albert E. Osborn ; Michael J. Murray ; Geo. W. Farnam ; Daniel W. Johnson, of E. S. Johnson & Co. ; Robert E. Freeman, with Henry Carter and H. Vincent O'Neill.



* A Complete History of Watch and Clock Making in America.

[By CHAS. S. CROSSMAN.]

Number Twenty-seven.

Continued from page 38, October, 1888.

SETH THOMAS WATCHES.



THE WATCHES bearing this name are a product of The Seth Thomas Clock Co., of Thomaston, Conn. The history of this company as clockmakers will be treated in the part given to the history of clock-making, while the watches are properly considered under the present head. Early in the year 1883 the manufacture of watches was first projected by the Seth Thomas Clock Company. No separate company was formed, but in the summer of 1883 the services of Mr. George Heath as master-mechanic, and Mr. Herman Reinicke as master-watchmaker, were engaged, and with a force

of fifty machinists the company began the manufacture of tools and machinery in the machine shop of the factory, under the superintendence of Mr. Heath. A new factory building was then begun adjoining the marine clock shop. The new building was a frame structure, four stories high, and was finished early in the spring of 1884.

Meanwhile the necessary tools and machinery had been constructed by Mr. Heath and his force of men, and these were removed to the new building. The lathes and automatic machines were, of course, purchased by the company.

At this time the force engaged numbered sixty and the manufacture of watches was begun in earnest, the model of which had in the meanwhile been constructed by Mr. Reinicke. It is an 18 size, open face, stem wind, three-quarter plate movement, with the escapement between the plates, and the balance, which is compensating, set below in the usual form. The movement, of course, fits the regular 18 size American cases. The first movements were an eleven jeweled grade and were made in 16,200 train; but later the 18,000 or quick train was adopted, and is now used exclusively. The peculiarity of the movement was the stem wind, which was all held in place by a single

yoke screw. It was a patent of Mr. Reinicke's and was used until 1886, when the present system was adopted.

In 1886, also, the company began the manufacture of higher grades. Flat hair springs have always been used in these movements, and these, as well as the dials and jewels, are all made by the company. At first plain regulators were used, but later the patent micrometer regulator was introduced into the higher grades.

Mr. Heath left the company in 1885 and was succeeded by Mr. John Alcott as master machinist. Mr. Reinicke was succeeded by Mr. Charles L. Higginbottom in March, 1886. Mr. Higginbottom had formerly been foreman of the finishing room of the Hampden Watch Company. He remodelled the watch somewhat, discontinuing the patent stem winding attachment. Mr. Higginbottom also made a model for a three-quarter plate hunting movement, which the company now make.

In 1886 Seth Thomas watches were made in four grades, namely, 7 jewels, 11 jewels, 15 jewels and 15 jewels adjusted. Since the date mentioned, four similar grades of hunting movements have been added. The number of employees at present engaged is two hundred; the present output of the factory, one hundred movements per day. The factory has a capacity of 250 movements a day. A new ladies' watch is now being begun by the company, which it is expected will be put on the market in about a year.

The watches were first placed on the market in 1885, at the several offices of the Seth Thomas Clock Company. The movements are sold separately, or cased as complete watches.

The prestige, the ample capital and the business capacity of the Seth Thomas Clock Company at the back of this enterprise, has made it an assured success from the beginning.

GEORGE P. REED, MELROSE, MASS.

George P. Reed is perhaps better known to the trade as the inventor of Reed's Patent Mainspring Barrel. He was born in Grafton, New Hampshire, in the year 1828, and at the age of eighteen we find him apprenticed to a harness maker. He early evinced a desire for a knowledge of watches, and one day, having a quartier watch which had the verge broken, he set about filing out a new verge for it from a harness needle. This first attempt of his in the mysteries of watchmaking was not a masterly piece of workmanship, as can well be imagined, but the watch was made to run after a fashion. Mr. Reed, in speaking of this incident, says: "Under the circumstances, it was the biggest job of my life."

Shortly after this incident we find him leaving the harness maker, and, at the age of twenty, entering the employ of Jacob Carter, a watchmaker, of Concord, New Hampshire. Here he remained two years and then went to Boston, where he worked in the capacity of a journeyman for a number of years. In the year 1854 he entered the employ of Dennison, Howard & Davis, in Roxbury, Mass., and later, when they removed to Waltham, he also went with them. Here he had charge of the pinion finishing room for a while, and he remained at this factory until the management was changed. It was while here that he invented his Patent Mainspring Barrel and Maintaining Power Combination. The patent was dated February 18, 1857. So far as is known, this was the first device ever made and applied to watches for the purpose of preventing damage from the breaking of mainsprings. The importance of the improvement was at once recognized, and he was awarded a gold medal by the Massachusetts Charitable Mechanics' Association.

At the time of the change in the management of the factory at Waltham, Mr. Reed returned with Mr. E. Howard to Roxbury. Mr. Howard had purchased of him the right to use his patent barrel. He remained at the Howard factory as foreman and adjuster until 1865, when he left for Boston and started in business on his own account. He engaged a room over the Five Cents Savings Bank in School street, and here he continued to adjust watches; he also began to work out an idea he had of an improved chronometer

escapement. This idea was to simplify its construction, thus rendering it easy to repair when broken or worn. Lack of space prevents our going into details. On this escapement, however, he obtained a patent dated April 7, 1868. Subsequently he made thirty pocket chronometers with this improved form of escapement. To his patent barrel improvement he also added a stem winding device.

In order to be better prepared to conduct this work he built a shop adjoining his residence in Malden. This he fitted up with necessary tools and put in a small engine, and, with two or three workmen, turned out about a hundred watch movements during the three years he remained there. Part of these were fitted with lever and part with his chronometer escapements, which he still continued to manufacture. For the purpose of enlarging his business, he hired a part of the lower floor of the building previously occupied by the Tremont Watch Company in Melrose, where he added a retail jewelry and a watch repairing department to his business of watchmaking. Here he remained until 1881, when the whole building was taken for other business, and he bought a house on Main street, the front part of which he fitted up for a retail store, and built a shop in the rear for manufacturing, which he still continues in a small way.

All of his watches run two days and have an up and down indicator on the dial. He has also made some changes in his stem winders in connection with his patent barrel, which he claims makes them second to none now in use. The movements are all eighteen size, nickel, three-quarter plate, and are artistically designed. Most of them are sold through a retail house in Boston who take the production.

Mr. Reed has experimented considerably with various combinations of the lever and chronometer escapements, and with one or two, which he has patented, has had good results. There is one of his watches which we desire to speak of in particular. It is his rotary watch which he made in 1862, and called the Monitor. It is quite similar in principle to some of the rotary watches of much later date, but it is undoubtedly the first rotary watch made in America, and was original with him. Mr. Reed, although not widely known to the trade at large, has, as the results of his experiments, made some valuable improvements, and, though in a quiet way, his improvements will assuredly be of lasting benefit to the watchmaking industry, and we trust they will result as well in financial advantage to himself.



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There were present at the regular monthly meeting of the Executive Committee of the Jewelers' League: President Hayes, Vice-President Johnson, and Messrs. Howe, Jeannot, Bardel, Greason, Jenks, Houghton and Sexton.

This was the first evening meeting since the summer season and it

was in its reports very encouraging and profitable to the interests of the League.

Plans for a half rate membership were discussed, but final action was deferred until next meeting.

Three requests for change of beneficiary were granted.

The following applicants were admitted to membership:

Frank M. Curtis, of Yonkers, N. Y., proposed by G. H. Houghton; Frank D. Dubarry, of Marysville, Cal., proposed by Wm. Seeger; Phil Harris, of Albany, Ga., proposed by S. F. Myers; Jules G. Huguelet, of Charleston, S. C., proposed by L. A. Wagner; Campbell V. Schuyler, of Arlington, N. J., proposed by H. B. Dominick; Geo. E. Wells, of Hackensack, N. J., proposed by Wm. Payne; Solomon Wolff, of Shreveport, proposed by C. T. Gordon.

Practical Speech Recorders and Reproducers.



WE ILLUSTRATE for the benefit of our readers this month two comparatively simple little machines, the general introduction of which to the public is destined eventually to bring about changes perhaps equally important to the civilized world as those which followed the invention of the electric telegraph. These two devices, which, after years of experiment, have at last been perfected and adapted to practical commercial use, are the phonograph and the phonograph-graphophone.

It will be remembered that the first fairly successful results in the

tions were thus produced on the tinfoil, which, being a non-elastic substance, retained them. If now the part which the mouthpiece played was reversed, the indented tinfoil could be used to reproduce the sound. This was best effected by a special mouthpiece of larger size, with a diaphragm of similar construction. This was so adjusted that the point was made to work along the indentations, setting the diaphragm in vibrations, which, being communicated to the air, reproduced the sound more or less accurately. Experiments with this early instrument, made in public at the time, showed that sound could be reproduced with it so as to be heard by a large audience. The sheet of tinfoil could be kept for an indefinite period, and could be made to give reproductions when desired. The tinfoil cylinder was turned by hand, the attempt being made to give it as uniform and regular a motion as possible. For physical laboratory researches the apparatus was employed to a slight extent, but was not adapted to any special practical use.

The engravings which we give in this issue, however show the latest and most improved form of the phonograph, which, as may be readily imagined, passed through a number of experimental stages. In its present shape it gives every promise of meeting the requirements of a practical substitute for a stenographer, taking dictations as readily and, in fact, more accurately and reproducing them for transcriptions by typewriter or other means when required. For this purpose it will shortly be offered to the public. The main principle of Mr. Tainter's phonograph-graphophone is the same as that underlying Mr. Edison's improved apparatus, though in detail the two differ, as will be seen later.

Fig. 1 shows an Edison Phonograph of the latest type as it will be offered for public use. The important modifications which have

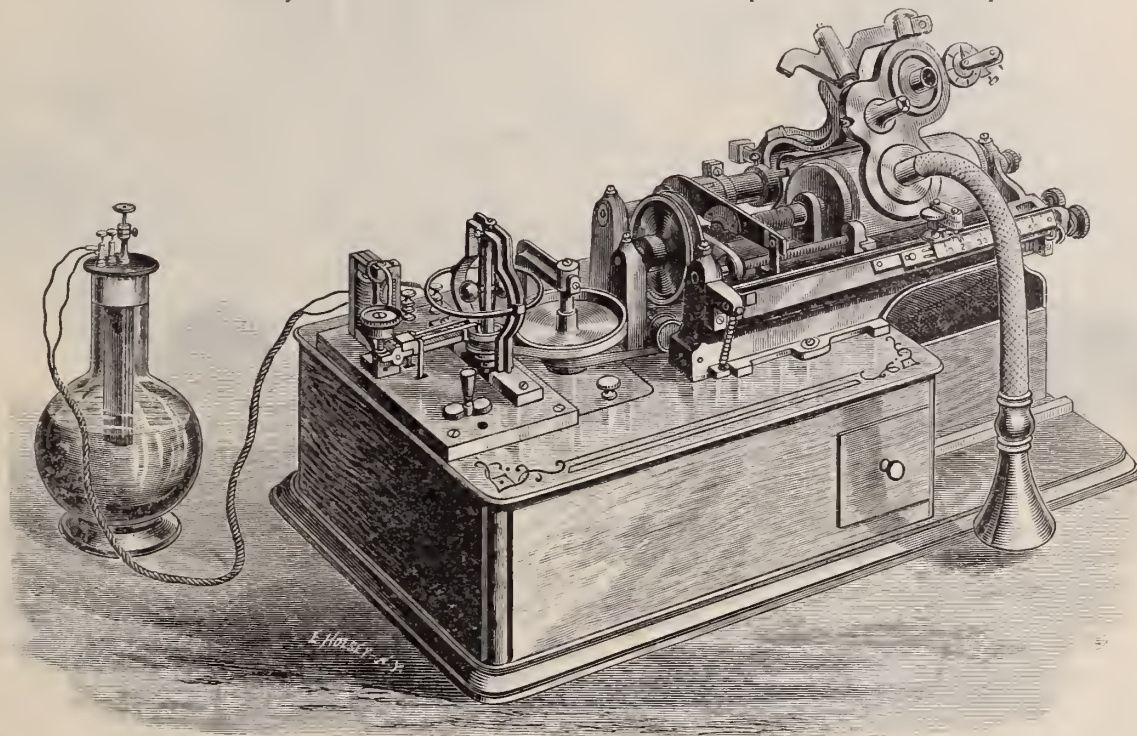


FIG. 1.—THE PHONOGRAPH.

way of recording and reproducing speech by mechanical means were made public about ten years since, the apparatus used being the Edison phonograph. Compared with what has more recently been accomplished, this original machine appears as a rather crude device, though the character of the results which it yielded was striking. Briefly described, it consisted of a cylinder coated with tinfoil, and so mounted in a frame that by means of a crank and screw a rotary and at the same time a longitudinal motion could be imparted to it. The sound to be recorded was directed into a mouthpiece closed by a thin elastic metal disk. By means of a spring a small steel point, rounded at the end, was fixed to the back of the disk and pressed gently against the surface of tinfoil, to which it transmitted the sound vibrations of the disk. A series of indenta-

been made will be at once noted. To begin with, in the later instruments, as in this one, the recording cylinder coated with tinfoil has been superseded by one of hardened wax. This is slipped over a mandrel mounted on a spindle which at the opposite end is threaded and rests in two bearings. Behind the spindle and the wax cylinder is a rod, upon which is arranged a slide, having at one end an arm, carrying a pivoted head with two diaphragms, one for recording and the other for reproducing sounds, and at the other end an arm adapted to engage a screw cut on the spindle, and also, by a hooked portion, another screw nearer the front, called a "kick-back" screw. At the extreme front right-hand end of the machine is a milled head controlling a small cam which can be made to tilt a pivoted bar through a certain angle shown by an index. Upon the

angles through which the bar is tilted depends the height of its front edge. On this rests the hooked portion of the arm, shown at the left of the cut. The hook itself engages with the "kick-back" screw underneath, while the main spindle screw is engaged on the top by a threaded section on the under side of the arm. The recording and reproducing diaphragm frame also is supported on the edge of the bar previously referred to. When this bar is so turned that its edge is at its lowest position, the arm at the left in the cut also is at its lowest position, and consequently its threaded position is in gear with the main spindle screw, imparting to the diaphragms a lateral movement. By slightly turning the head before mentioned, the edge of the bar is raised, raising with it the diaphragm frame, so as to have the stylus of whichever one may be in working position clear the wax cylinder and raising also the hooked arm, throwing it out of gear with the main spindle screw. The spindle and cylinder then revolve idly. By turning the head further and raising the edge of the bar still higher, the hook of the arm is brought into gear with the "kick-back" screw. This screw is of much coarser pitch than the other, and revolves in the reverse direction, its office being, in reproducing, to bring the stylus on the reproducing diaphragm back to any desired point, as may be determined by the scale and index on the front of the machine, so as to repeat any particular part of the record. The arm may be thrown into or out of gear with the main

piece of cork, being, besides, connected with the side of the diaphragm holder, as in the case of the recorder, by an arm. In reproducing musical notes the cork support just mentioned is replaced by rubber, this material having been found more satisfactory for the purpose because of its greater elasticity. The sound waves produced by the diaphragm are transmitted through a rubber tube, which is branched and provided at its extremities with ear pieces similar to those of a stethoscope. These are lightly placed in the ears of the operator. To make the necessity of this clear, we will explain that in the early form of phonograph distinctness and accuracy were sacrificed to volume of sound, while in the present instrument the reverse is the case; so that while the reproduced sound is audible only to the operator equipped with the branched tube and ear pieces referred to, it is heard exactly as it was delivered into the mouthpiece against the recording diaphragm, all the variations of tone being faithfully given. Motion for the instrument is supplied by a small electric motor in the box forming the base of the apparatus, connection being made with a battery. The motion is transmitted to the main spindle and to the "kick-back" screw by a number of small belts and pulleys. It will perhaps have already been understood that in using the phonograph the recording diaphragm is first placed in its proper position for action on the wax cylinder, or phonogram, as it is called. As this revolves the small knife pre-

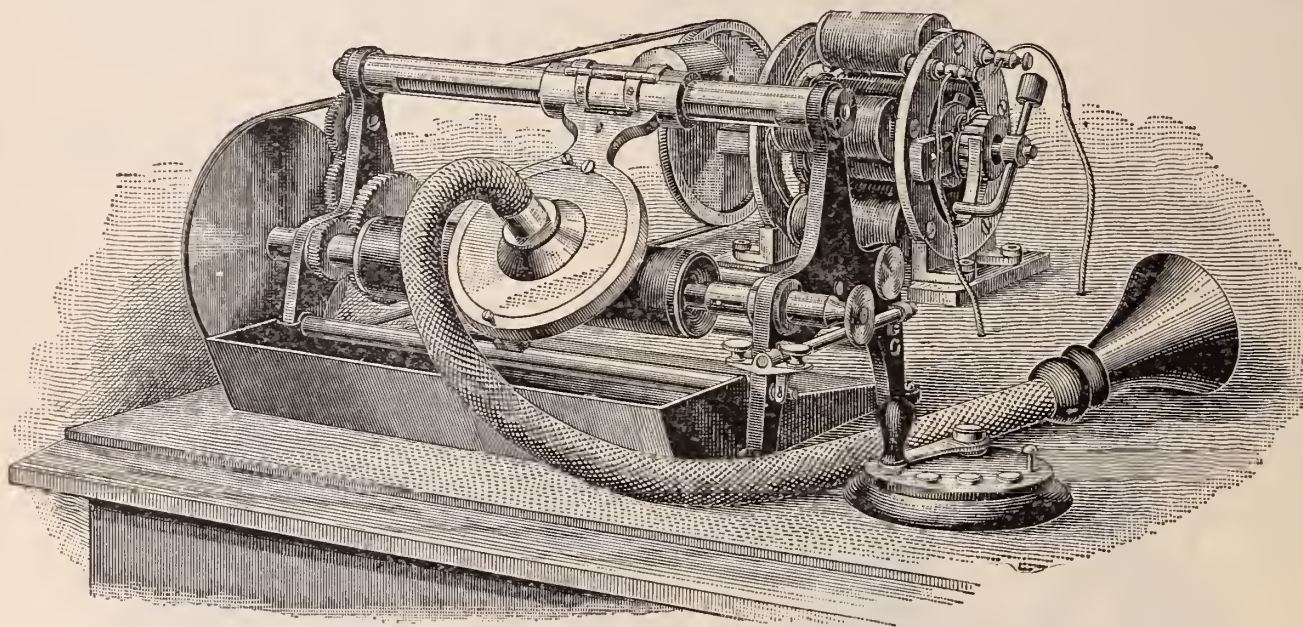


FIG. 2.—THE PHONOGRAPH-GRAPHOPHONE.

screw by a treadle arrangement not shown, so that in transcribing the record on the wax cylinder by means of a type writer, for example, the operator may stop the reproduction with his foot at any point, after having heard as much as he can conveniently remember, and proceed again when ready for the next sentence.

The position of the diaphragms can be readily adjusted by swinging the head in which they are mounted so as to bring either the recorder or the reproducer, as required, in its proper place in front of the wax cylinder. Suitable adjusting screws are, moreover, provided for securing a proper degree of pressure between the stylus of each diaphragm and the cylinder. The recording diaphragm, shown in its working position in our engraving, is furnished with a funnel-shaped mouthpiece, attached to a short, fixible tube. The diaphragm proper consists of a very thin plate of malleable glass and the stylus is attached to its center, being, in addition, pivotally connected with a spring arm fixed to the side of the diaphragm holder. Fitted slightly in advance of the stylus is a small knife, clearly shown in the illustration, which prepares a new, clean surface for the impression, cutting away all traces of previous records should there have been any on the wax. The reproducing diaphragm consists of bolting silk thinly coated with shellac, and the needle or stylus is attached to its center through the intervention of a small

viously mentioned, operating similarly to a lathe tool, prepares a smooth surface on the wax, and, in virtue of the arrangement adopted, is immediately followed by the recording stylus, which, under the influence of the vibrations of the glass diaphragm produced by the sound entering the mouthpiece, cuts into the wax and produces corresponding indentations.

The diaphragm with its stylus and knife is fed along by the screw cut on the main spindle, the "kick-back" screw being out of gear, and slowly traverses the wax cylinder. After the record is made, the carriage is again returned to the point of starting, the recording diaphragm is replaced by the reproducing diaphragm, and the carriage is again moved forward by the spindle screw as the cylinder revolves, causing the stylus of the reproducing diaphragm to traverse the path made by the recording needle. As the point of the curved wire attached to the diaphragm follows the indentations of the wax cylinder, the reproducing diaphragm is made to vibrate in a manner similar to that of the recording diaphragm, thereby faithfully reproducing the sounds uttered into the receiving mouthpiece.

A little thought will suggest a variety of uses for the phonograph. It may be employed for dictations and testimony in court, for reporting speeches, for the reproduction of vocal music, for teaching languages, for correspondence, etc. In dictating, one may talk as

rapidly as one chooses—every word and syllable will be caught upon the delicate wax cylinder, and afterward the latter may be transferred to the phonograph of a copyist, who may listen to the words of a phonogram and write out the manuscript. If any portion of the speech is not understood by the transcriber, it may be repeated as often as necessary. In a similar manner a compositor may set his type directly from the dictation of the machine, without the necessity of "copy," as it is now known. The wax cylinders are very light, and may readily be mailed in specially devised mailing cases. A number of records may be made on each cylinder owing to the thickness of the wax walls, the surface of which is cleared before every new series of impressions by the knife which travels in advance of the recording stylus.

Similar in principle to the phonograph, is the phonograph-graphophone, invented a number of years later by Charles Sumner Tainter, and rapidly developed by him into a practical and commercially valuable machine. As will be seen by a glance at figure 2, it is an exceedingly simple piece of apparatus. The frame of the machine consists of end pieces connected by longitudinal rods. In the top of the frame is journaled a fine screw inclosed in a slotted tube, the screw being driven through a train of spur-wheels from the main shaft journaled in the lower part of the left-hand end piece. The main shaft, besides carrying the gearing which moves the feed-screw, is provided with a conical chuck. In the opposite end of the frame is journaled a spring-pressed spindle, which also carries a conical chuck of the same form and size as that on the main shaft. The cylinder upon which the sound is to be recorded is received between these chucks in much the same manner as the bobbin is placed in the bobbin winder of a sewing machine, the cylinder being revolved by frictional contact with the chuck on the main shaft. The cylinder consists of a spirally wound strip of paper coated with a specially prepared hardened wax, and is very light. Not more than one tracing over its surface can be made, but its cheapness obviates the objection which might otherwise be raised to throwing it away and substituting a new one with a fresh surface. Below the cylinder is arranged a pan for receiving the fine shreds of wax which the recording stylus cuts from it, the number of grooves to the inch being about 160. At the right hand of the instrument is arranged a small rock shaft, provided with a cross arm and two keys working a clutch, by which the driving wheel is thrown into and out of connection with the gearing of the machine.

Upon the tube which incloses the feed screw is placed a counter-weighted saddle, provided with a follower, which enters the slot of the tube and engages the feed screw. The saddle carries a frame, in which is arranged a diaphragm of mica provided with a stylus, which engraves the record on the surface of the cylinder. A metal bridge extends across the face of the diaphragm, being attached to opposite sides of the diaphragm holder, and rests, at its middle, upon the record cylinder a little in advance of the stylus, thus supporting the weight of the diaphragm and its direct attachments. The depth to which the stylus penetrates the wax coating is in this way also regulated. The saddle is made up of two parts, hinged on top so that, together with the diaphragm holder, it can readily be removed. The recording action is much the same as in the phonograph, the diaphragm with its stylus being fed along the axis of the wax-coated cylinder by a screw, while tracing its record on the wax. A separate and smaller reproducing diaphragm also is used. The reproducing stylus is pivoted, and transmits its vibrations to the diaphragm through a delicate rod. From the diaphragm holder is led a flexible tube, branched as in the case of the phonograph, and similarly provided with ear pieces. It is mounted on the tube inclosing the feed screw, like the recorder, a light spring, however, being used to press the stylus against the record cylinder. This spring is not necessary in the case of the recorder, since the weight of this with its attachments is much greater and amply sufficient to give a satisfactory impression on the wax.

In reproducing what has been recorded on the cylinder the

recorder is replaced by the arrangement just described, and ear pieces of the branched tube are adjusted in the ears of the operator. The apparatus being put in motion and one of the small clutch keys shown on the right of the machine being pressed, the reproduction of what is recorded on the wax cylinder commences, and when as many words as are desired are produced a slight pressure on the second key stops the cylinder, while the motion of the driving wheel at the left continues, and the words reproduced are printed by the typewriter. The first key is then pressed again, and a few more words of the record produced, which are in turn printed by the typewriter, and so on throughout the record. The capacity of a wax cylinder six inches long and one and one-quarter inches in diameter when dictated to at the rate of 150 words per minute, is about 700 words, this however, depending upon the surface velocity.

The grooves cut in the wax by the recording stylus is only $\frac{1}{1000}$ inch wide and less than this in depth, and 161 grooves to the inch are cut on the cylinder. The total length of the record on a six-inch cylinder will therefore be about 250 feet. Cylinders two, four, and six inches long are used. The operation of changing them does not occupy more than a few seconds. Motion is derived, either from a treadle or from a small electric motor of special design, the invention of Dr. Orazio Lugo, of New York, worked by a battery. Changes of speed may be effected by a switchboard alarm in front, at the right.

It is of no little interest to note that within the past half year phonograph-graphophones have been to some extent in practical use and shown their value as labor-saving devices. They were used at Washington in both Houses of Congress on work in connection with reporting the proceedings, as well as by members for their correspondence. We understand that many of the leading stenographers and lawyers at Washington are also using them, and find them of great help in their work. Thousands of record cylinders have been issued to supply these machines. Like the wax cylinders of the phonograph, they can be made to reproduce the records on them over and over again, and can be sent through the mails in specially devised boxes.

Both Mr. Edison's and Mr. Tainter's machines are controlled by the North American Phonograph Company, 160-164 Broadway, New York, the office for the Metropolitan district being at 13 Park Row. They will be offered to the public at the same fixed rates per year or part of a year, this plan being adopted in preference to disposing of them by outright sale. Prospective users can thus have their choice of either of the machines uninfluenced by difference in cost, and the demand for either the one or the other will be, to some extent, a measure of its popularity and special adaptation to every-day requirements.



[FROM OUR SPECIAL CORRESPONDENT.]

PARIS, Sept. 12, 1888.

How is it that the Parisian silversmiths hardly dare to allow their fancy to carry them out of the four consecrated styles, called Renaissance, Louis XIV., Louis XV. and Louis XVI.? A thorough answer to that question would fill up many pages. We must try to condense it the best we can in a few lines. It is evident that our nobility are anxious to see themselves surrounded with things which, by their forms and designs, daily remind them of the happy times when their glorious ancestors used to prance about a brilliant court. Besides, in choosing one of those well-known styles, they are sure to

have something elegant and which can never be out of fashion. Moreover, it saves them the trouble to indicate or to approve of an original pattern, which, being executed, might not be the very perfection of beauty. The middle class people, desiring to show their good taste, blindly follow in that respect the nobility, from whom they are, in politics, so widely separated. Consequently the silver-smiths must, as a rule, confine their artistic inspiration within the boundaries of the four historical styles, since they are the only ones admitted by their customers. But, happily, those limits are not so narrow as it might be expected, and we may confidently assert that the silverware manufacturers can, without leaving them, find an almost infinite scope for the expansion of their imaginative powers.

It seems to us that the privileges allowed to poets ought not to be refused to artists of any kind, as long as the liberty they use in handling a subject is conducive of good results. Although we thoroughly understand that the names of those who rank far above the others, in the admiration of men, ought not to be too freely brought down to the level of a comparison, yet our opinion is that if the deep-sighted, peerless Shakespeare, in *Timon of Athens*, and the refined Racine, in *Phèdre*, have shown us a Greek style of their own, utterly different from that of Sophocles in *Edipus*, etc., a metal worker of genius, if he does exist, or even one of talent must not be denied the right to alter an accepted mould, according to his own taste and fancy, if, by so doing, he gives life to some unquestionable works of art.

This, naturally, brings us to mention the presents received by the Princess Lætitia Napoléon, on the occasion of her marriage with the Prince Amédée, Duke d'Aoste, the King of Italy's brother.

The toilet set in massive silver, sent by the Parisian ladies, who cherish the memory of Princess Clotilde, the young duchess' mother, is as elegant as anything can be that comes from Bapst & Falize's place. A true artist, the sculptor, Jouindy, has modelled all the different parts of it, according to the process called *cire perdue*, and the ensemble of his competition is thoroughly new and original, in spite of the indispensable glimpses of old style, which, for the above reasons, must flash in a work of that kind. It consists of a looking-glass, one metre high, with the royal crown of Italy at the top and the imperial eagle with displayed wings at the base, the frame being covered with shell-like ornaments half wrapped up in twigs of myrtle and foliage capriciously winding. Two candelabra raise in front of that glass, one on either side, with three branches each, shooting up in a gracefully undulating manner above the standing part, which bears the imperial bird and the escutcheon engraved with the princess' initials. A large oval basket jardinière, the brim of which is most daintily chased, comes next, with two rectangular boxes and two round ones adorned in the same way. Two graceful boards ornamented, each with five different motifs in the genre *rocaille*, complete that lovely toilet set, supported by a Louis XV. table, carefully copied by Dasson from the original, preserved in the Garde-Meuble.

Among the other presents, we must mention a handsome fan made by Rodien. It shows three painted medallions (joined together by various ornaments in the Empire style, intermingled with emblems of war), the middle one being a side-face portrait of the first Napoleon when he was only General Bonaparte. The gilt ivory mounting is beautifully carved, and the whole of it is of the same regular design. The imperial arms and those of Savoy, side by side, and supported by an eagle soaring, are on the center part of it. An "L." made of brilliants and surmounted with the proud emblematic bird, shows in relief on the principal stick, and pretty courses of chased gold glittering here and there complete the effect.

Princess Lætitia received from the Empress Eugénie a necklace and a tiara made of emeralds and diamonds, which have been the property of Queen Hortense, Napoleon III.'s mother.

The King of Portugal's present is a handsome diamond necklace, consisting of very large solitaires alternating with eagles, which are

gatherings of brilliants. The whole of it is of a grand effect, and shows the good taste of Morel & Co.

The Duke d'Aoste gave to his young bride a magnificent crown, numbering fifteen hundred diamonds. Those at the base measure 5 mm. in diameter, and the center ones 12 mm. The outside setting is in silver and the inside one in gold. The different parts of that glorious head piece can be undone and converted into a necklace, two bracelets and a diadem. The whole weight is not superior to 370 grammes.

Mr. Lignac, chief of the weights and measures' testing officers in Bordeaux, has come to Paris and offered to President Carnot, in the name of his body, a very neat pair of scales. They are in silver and engraved with the initials of our amiable ruler. The beam and all the parts connected with it are made of polished steel, beautifully finished, and placed in a crystal box with a gold mounting daintily chased. The scales, resting on a socle, are preserved in a crimson velvet case. The weights are in gilt silver.

At the last royalist banquet, that took place in the large feasting room of the Continental Hotel, the Duke d'Audiffret-Pasquier, who presided over the noble meeting, wore at his buttonhole a tiny rose in gold, which he had received from the Countess de Paris on that very day. The sympathetic princess intends to bestow a similar favor on every one of her husband's warmest followers. Consequently, she has given an order for fifteen hundred roses in gold to the habitual goldsmith of the French royal family, and they will be sent very shortly to Sheen House. Our princess' favorite flower used to be the pink, but as soon as General Boulanger chose it as an emblem for his party she at once replaced it by the rose of France.

A competition has been opened by the Paris Town Board in order to obtain a *Compteur d'Electricité*. Ten thousand francs will be awarded to the inventor of the very best metre, and each one of the five who will come next shall receive two thousand francs. The Town Board intend to establish in a special part of the Halles Centrales, the various works necessary for the production of electric light, electric power, etc. A competition will also lead to the most practical and the most economical way of doing it.

Playful fancy is now handling clocks in the same picturesque manner so striking in watches. For instance, a drummer of the last century (in painted metal) with the cocked hat and the high mounting gaiters, has his drum, of a cylindric long shape, hanging on the left side, and a clock is encased on the top of the military instrument, slightly bent forward.

An athlete, in bronze, standing in the usual attitude, holds with his right hand stretched up the well-known bar with a big ball at each end, called *haltères*. The man is finely built. His broad chest, expanded through the effort, the fully strung muscles of his right arm and his sinewy legs give the thorough impression of strength. But the general appearance is not one of unconscious, massive vigor. There is nothing of the heavy-set, half-brutish Hercules about our man. His face is expressive of bright intelligence, and his firmly drawn forehead shows a determined will. On one of the balls of the *haltères* we see a clock placed in front, and on the other one a barometer.

Most happy to see, at last, the nice weather smile on the sea shores, our elegant ladies would stay until the beginning of October. They did look very pretty in their blue marine jacket and their neat plastron with pink stripes, and the white silk cravat was very bewitching, as a sailor's knot with a big sapphire sparkling on it.

JASEUR.

TO LOOSEN RUSTY SCREWS.—It is difficult sometimes to loosen a rusty screw; if you cannot withdraw such a one, heat an iron rod to a white heat, and hold it for two or three minutes against the screw-head, after which the screw will come out with facility.

Gold and Gold Plating.



STHERE are various substances used in the different processes of electro-deposition, it will be useful to the practical operator in the art to be acquainted with some special technical points of information respecting them, which may effect the success of his operations, and which have not been referred to heretofore.

Water.—Distilled water is the most suitable for making solutions. It should give no cloud on adding, to separate portions of it, a few drops of solutions of argentic nitrate, chloride of barium or

oxalate of ammonium, nor become brown on addition of sulphuretted hydrogen water. If distilled water cannot be conveniently obtained, filtered rain water may usually be employed in its stead.

Nitric Acid—Called also "aqua fortis." The pure acid for dissolving silver, etc., should be colorless, have a specific gravity of not less than 1.52; and separate portions of it, diluted with pure distilled water, should give no cloud with a single drop of solution of nitrate of silver, or of chloride of barium. It should be kept in a stoppered bottle, in a dark, cool and dry place. If a drop of this or any other acid falls upon one's clothes, diluted aqueous ammonia should at once be freely applied.

All the pure, strong acids should be kept in stoppered bottles in a dry place. Carboys of common acids and dipping liquids should have stoneware stoppers and be kept in an outhouse.

Hydrofluoric Acid.—Called also "fluoric acid." This liquid is always very impure. It should be kept in a bottle of gutta-percha, provided with a stopper of India rubber, in a dry and cool place, and not in close proximity to glass vessels, because the vapor corrodes them. It is highly dangerous to breathe the fumes of this acid, and if a drop of it falls upon the skin, it should be thoroughly washed off at once, otherwise after a few hours great pains will be suffered.

Hydrochloric Acid.—Called also "muriatic acid," "spirits of salt," and "smoking salts." The pure acid should be colorless, of not less specific gravity than 1.20. It should be left in a cool place.

Aqua Regia.—Called also "nitro-hydrochloric acid." This is a mixture of one volume of nitric and from two to three of hydrochloric acid. It should not be prepared until required to be used, because it decomposes spontaneously.

Blacklead.—Called also "plumbago" and "graphite." This substance always contains a little earthy matter, silica, oxide of iron, etc. The most suitable kind is usually very black, but without much luster until after rubbing. It should adhere to the articles and not become detached when they are immersed in the solutions. The best can only be selected by means of actual trial, and should be gilded or silvered.

Sulphuretted Hydrogen.—Called also "hydric sulphide," "sulphide of hydrogen," etc. This substance is a gas, and may be easily prepared by putting some fragments of prepared sulphide containing one equivalent of sulphur to one of iron ("sulphuret of iron") into a flask with some water, and then adding sulphuric acid. The gas should be washed by passing it through a small quantity of water. Sulphuretted hydrogen water is prepared by passing the washed gas in bubbles through distilled water until the water is saturated. The water only dissolves about three times its bulk of the gas, or one part by weight of the gas dissolves in about 250 parts of water. The solution soon decomposes.

Sulphurous Anhydride.—Called also "sulphurous acid." This is best prepared by heating in a glass flask strong oil of vitriol contain-

ing fragments of copper wire. The flask should be protected from direct contact with the flame by a sheet of iron-wire gauze.

Sulphuric Acid.—Called also "oil of vitriol." The pure acid should have a specific gravity of not less than 1.85, and be nearly, or quite, colorless. The least trace of dust or organic matter imparts a darkness of appearance to it. It should be kept in a dry place. When diluting it, the water should not be poured into the acid, because that is dangerous, but the acid into the water, and that slowly.

Bisulphide of Carbon.—Called also "sulphuret of carbon" and "carbon disulphide." This is a very volatile and inflammable liquid, and a flame should not therefore be brought near its vapor. It should be kept in a well-stoppered or corked bottle in a cool place.

Phosphorus.—This substance should be kept in a wide-mouthed stoppered bottle, filled with water to keep the air from contact with it. The bottle should also be covered with black varnish and kept in a dark place, because the light changes the phosphorus and makes it insoluble. Phosphorus should never be exposed to the air for more than a few seconds, or it may inflame, or it should always be cut while under the surface of water.

Phosphorus Solution.—Called also "Greek fire." Is a highly inflammable and dangerous mixture, composed of phosphorus dissolved in bisulphide of carbon. It should only be prepared in small quantity, and the bottle containing it should be kept in a cool place, partly immersed in sand, in a stoneware vessel covered with a metallic lid. It is extremely liable to spontaneous combustion, especially if any be spilt.

Arsenious Acid.—Commonly called "white arsenic." Only a small quantity of this is required. The bottle containing it should be kept in a dry place, out of the reach of careless persons, and should be distinctly labeled "Poison!"

Antimony.—In purchasing this metal, what is known as the "best Star antimony" should be selected. It may be known by its whiter appearance, and by having crystalline markings, looking like fern leaves, upon its surface.

Bismuth.—This metal varies a little in quality, and is liable to contain traces of arsenic, and sometimes also of copper. The purer kinds are very much higher in price than the common variety.

Chloride of Platinum.—Called also "platinic chloride," "muriate of platinum," etc. As the substance sold in shops is liable to contain a variable proportion of platinum, it is best for the operator to prepare the salt himself. The only common salt of platinum is the tetrachloride, made by dissolving scraps of platinum in a hot mixture of one volume of nitric acid and two and one-half volumes of hydrochloric acid, until the liquid acquires a deep-red color, and then evaporating the solution nearly to dryness, and allowing it to cool and solidify; it is a deep-red salt, very freely soluble in water. The other salts of platinum are usually made from it.

Chloride of Gold.—Called also "muriate of gold" and "auric chloride." It is better to prepare this than to purchase it, because the commercial article is liable to contain a variable proportion of gold; it should contain 65.2 per cent. of that metal. The method of preparing it was described in No. 10, Vol. XVIII. (1887).

Silver.—This metal may be tested for copper by dissolving it in warm dilute nitric acid, precipitating all the silver by means of a slight excess of hydrochloric acid, and then adding a drop of solution of ferrocyanide of potassium, or by adding ammonia to the solution of argentic nitrate until all the precipitate first formed is re-dissolved. Now look down through a considerable depth of the clear liquid; if a blueness is visible, copper is present.

Nitrate of Silver.—Called also "argentic nitrate," "lunar caustic," etc. It should be in colorless crystals, free from odor of nitric acid, entirely soluble in distilled water, and should contain 63½ per cent. of silver. To ascertain the latter point, simply melt it at full red heat, with a little borax in an earthen crucible, and weigh the metal; or precipitate its solution by a slight excess of dilute hydro-

chloric acid; wash, dry and weigh the precipitate; $143\frac{1}{2}$ parts of it equal 108 of silver.

Chloride of Silver.—Called also "argentic chloride," "horn silver," and "muriate of silver." This substance should contain $75\frac{1}{4}$ per cent of silver. To ascertain its percentage, melt it, at full red heat, with an excess of perfectly dry (that is, anhydrous) carbonate of sodium, in an earthen crucible, and weigh the bottom of silver. The chloride is decomposed by light, and should be kept in an opaque bottle in a dark place.

Mercury.—Called also "quicksilver." Pure mercury is perfectly bright and leaves no tail of drossy appearance on pouring it all slowly out of a vessel; it also volatilizes entirely by heat. It should be kept in strong bottles, and not allowed to come into contact with any metals, except iron, platinum or aluminum.

Amalgam of Gold.—To prepare it, heat pure mercury to about 200° C., and add to it the gold in foil or ribbon; the gold is readily absorbed and forms the amalgam.

Sulphate of Copper.—Called also "cupric sulphate," "blue vitriol," "blue stone," "Roman vitriol," etc. The pure salt should be in large crystals of a deep blue color, without any admixture of green; the latter indicates the presence of iron. To test for iron, dissolve a little of the salt in distilled water, add aqueous ammonia, with stirring, until the blue precipitate is re-dissolved. After standing some time, pour away the clear blue liquid, add distilled water freely to the residue, and allow it to stand for some time again; a residue of red-brown powder indicates the presence of iron.

Nickel.—This metal is always contaminated with silicon and carbon, which remain as a black powder on dissolving the metal in acids. The dried black powder, when fused with saltpeter, produces a mixture of silicate and carbonate of the alkali. The metal also frequently contains copper; to test for this, dissolve the metal in aqua regia, evaporate the solution to a small bulk, dilute with water and add sulphuretted hydrogen water; if a blackish cloud is not produced, copper is not present.

Sulphate of Iron.—Called also "green copperas," "green vitriol," etc. It should be in the state of clear green crystals, perfectly free from adhering water or acid, and with no brown or red powder about them. It must be kept dry, and in well closed bottles.

Carbonate of Lead.—Called also "white lead." It is a heavy, white powder, and should be entirely soluble in warm, dilute nitric acid; any white insoluble matter is probably sulphate of barium.

Tin.—This metal is often adulterated with lead, to detect which cut the tin up as small as possible, digest it with warm dilute nitric acid; evaporate the liquid part to a small bulk, dilute with water and add sulphuretted hydrogen water; a black color or precipitate indicates the probable presence of lead or copper.

Caustic Lime.—Called also "lime" and "stone lime." The best quality is perfectly white, and after having been slaked may be rubbed to a soft, creamy mixture with water; gritty particles consist of silica. Lime should be kept in well closed jars of stoneware; if the damp gets in, the lime is apt to swell and burst the vessels. Avoid strong building limes; these, especially the hydraulic cements, always contain clay or iron in considerable quantity.

Carbonate of Sodium.—Commonly called "soda" and "washing soda." This is usually sold in the form of clear, colorless crystals, which lose their water and their transparency by exposure to dry air, and fall to a white powder. Two hundred and eighty-six parts by weight of the clear crystals require fifty-six parts of pure anhydrous caustic lime to convert them wholly into caustic soda.

Caustic Potash.—Called also "potash" and "*lapis infernalis*." This substance is sold in several forms, of different degrees of purity. It should be kept as much as possible from contact with the air, because it rapidly absorbs moisture and carbonic acid. A solution of it may be made by converting fifty-six parts by weight of pure and dry caustic lime into a cream by slaking it with water and then stirring it with more water, adding the creamy mixture to 138 parts of anhydrous pearlash dissolved in hot water, and boiling the mix-

ture; the lime subsides to the bottom in the form of a carbonate. A purified variety of caustic potash is sold in the form of rods about six inches in length. Great care must be taken not to handle it, as it is very caustic and makes most dangerous sores.

Carbonate of Potassium.—Called also "pearlash," "salts of tartar," etc. It is a white salt, strongly alkaline and deliquescent, and should be kept in well closed bottles or jars.

Gaseous Ammonia.—This substance may be easily prepared by separately powdering and then intimately mixing equal weights of dry caustic lime and salammonia, and heating a mixture in a glass flask.

(To be continued.)

† Precious Stones in Canada.

BY GEORGE F. KUNZ.



AGATE, CHALCEDONY AND CARNELIAN.—Agates are found along the entire coast of Lake Superior in great abundance and often of considerable size and beauty. The finest in this region, however, are derived from the trap of Michipicoten Island,* Ont. They also occur on St. Ignace and Simpson's Islands, Ont., on the former only as nodules in the trap. Both chalcedony and agate occur also as veins filling dislocations and cracks which penetrate the trap in several directions. In the Thunder Bay district they are associated with amethysts, occurring also as pebbles. Although these agates are often of rich color, and are beautifully veined, they are rarely over two inches across. Many are sold to tourists for ornaments, and many others could probably be disposed of if a little more attention were given to cutting and polishing them. As natural agates their color is exceptionally fine. Nearly all the large agates sold in this region are foreign material as well as of foreign coloring and cutting. Agate pebbles, known to the collectors as Gaspé Pebbles,* are found in the conglomerate of the Bonaventure formation, on the Baie des Chaleurs, Que., and along the shore of Lake Superior, in the vicinity of Goulais Bay, and especially on the St. Mary's River. Handsome agate and chalcedony in nodules and veins are of frequent occurrence on the south shore of the Bay of Fundy,* between Digby and Scot's Bay, N. S. Large masses of agate have frequently been found on this coast. Gesner mentions a mass of 40 lbs. weight made up of curved layers of white, semi-transparent chalcedony and red carnelian, forming a fine sardonyx. A mass showing distinct parallel zones of cacholong, white chalcedony and red carnelian, was found a few miles east of Cape Split, N. S.* When polished it resembles an aggregation of circular eyes, and hence the name eye-stone, or eye-agate is applied to it.

At Scot's Bay, N. S., large surfaces of rocks are studded with these minerals. Fine specimens are also found at Blomidon, and at Partridge Island, N. S. Fine agates and carnelians occur at Digby Neck, six miles east of Sandy Cove, Woodworth's Cove, west of Scot's Bay, and at Cape Blomidon, N. S. Fine agates, chalcedony and carnelians are also found in New Brunswick, at Darling Lake, at Hampton, near the mouth of the Washdemoak River, at Dalhousie and on the Tobique River in Victoria County.

An unique blue chalcedony, rich brownish green by transmitted light, is mentioned by How, from Cape Blomidon, N. S. Agate often occurs in layers forming an onyx in the Bay of Fundy and Lake Superior regions. Beautiful ones are found at Two Islands, Cumberland County, near Cape Split, at Scot's Bay and at Parrsboro, N. S. At the Queen Charlotte Islands, B. C., they occur abundantly at some localities, being derived from the miocene-tertiary rock.

Beautiful moss agates are found at Two Islands, Cumberland

* From the Report of the Department of Mining Statistics, published by the Geological Survey of Canada.

County, and near Cape Split, Partridge Island, also at Scot's Bay, King's County, N. S., exceptionally fine at the latter locality. Chrysoprase of fair color has been found in the Hudson's Bay district, on Belanger's Island.*

Silicified woods are found to some extent in the northwest territories* and in British Columbia. This is a beautiful ornamental stone when the colors are fine and it is highly polished.

Jasper conglomerate exists in mountain masses, along with the quartzite masses of the Huronian series, for miles in the country north of the Bruce Mines,* on Lake Superior north of Goulais Bay,* on the St. Mary's river about four miles west of Campment d'Our's, and at two places on the east shore of Lake George, and on Lake Huron, Ont. It is a rock consisting of a matrix of white quartzite, in which are pebbles often several inches across, of a rich red, yellow, green or black jasper, and smoky or other colored chalcedony, which form a remarkably striking contrast with the pure white matrix. It is susceptible of a very high polish, and has been made into a great variety of ornamental objects, such as vases, paper weights, etc. Some very beautiful mosaics have been produced by using the rock and included pebbles. The stone occurs in thick bands which extend for miles, and large boulders of it are scattered along the shores of the lake and rivers. Within half a mile of the northern extremity of Goulais Bay, Ont., there is a ridge containing several varieties of it.

Large quantities of rich red jasper are found in Hull, Que. Yellow and red occur at Handley Mountains, Annapolis, Pictou, Gulliver's Hope, Blomidon,* N. S.; at Belleisle Bay, King's County, Grand Manan, Darling's Lake and Hampton, near the mouth of the Washdemoak River; at Red Head, and at the Tobique River, Victoria Co., N. B.; Woodworth's Cove, west of Scot's Bay, and all along the shore of the Bay of Fundy from Sandy Cove,* N. S. Near the head of St. Mary's Bay lie large blocks of red, yellow† and yellowish red jasper, often banded, but generally impure, however.

Considering the abundance of this jasper it seems strange that so beautiful an ornamental stone should have been so long neglected, but the recent improvements in sawing and polishing hard stones for ornamental purposes will doubtless bring it into extensive use in the near future.

Heliotrope (bloodstone) in good specimens is of rare occurrence in the North Mountain, Bay of Fundy, N. S.*

Dr. Gesner mentions finding two small nodules of opal, resembling pieces of wax, at Partridge Island, N. S.

Semi-opal has been found at Partridge Island in fine specimens, at Grand Manan, N. B., and other localities in that vicinity.

Cacholong has been found associated with chalcedony in Nova Scotia on the Bay of Fundy.* The hornstone found at Partridge Island admits of a fine polish and is of some use as an ornamental stone.

JADE.—Jade (nephrite) in the form of archæological implements, has been found from the Straits of Fuca northward along the entire coast of British Columbia and the northern end of Alaska. At the latter place it is closely allied with other minerals such as the new form of pectolite, and is found with other relics of various kinds about shell heaps and old village sites, in graves, or still preserved, although seldom used, by the natives. It is also found as far inland as the second mountain system of the Cordillera belts, represented by the Gold, Cariboo and other ranges, principally among remains from Indian graves, and along the lower portions of the Fraser and Thomson rivers within the territory of the Selish people. In the interior it is of rare occurrence, the coast Indians having used the tools in the construction of their houses and canoes, which are much superior to those of the interior. Dr. Geo. M. Dawson pro-

cured about sixty specimens for the Survey Museum, and at McGill College there is a fine series together consisting of 44 adzes, 6 drills, 2 boulders and 9 other objects. Dr. Dawson says: "It is among the highly altered and decomposed rocks of the Carboniferous and Triassic that silicates of the jade class might be expected to occur, and I feel little doubt that when these rocks are carefully investigated they will be found to be the sources of the jade." The Indians of the region, however, have usually, if not invariably, obtained their supply from loose fragments and boulders.

Jade is also reported from the Rae River and from the Hudson's Bay district by Mr. Rae.

This stone is highly esteemed in China and India, where it is carved into fine art objects and sold in large quantities—a single object requiring the work of a lifetime, and selling for thousands of dollars. In New Zealand it is made into charms, trinkets, paper cutters, and in copies of native aboriginal objects.

PECTOLITE.†—Among the minerals sent to the United States National Museum from Point Barrow, Alaska, was a substance which Prof. F. W. Clarke identified as pectolite. It had a specific gravity of 2.873, was white, grey and pale green in color, and about as hard as jade. Almost simultaneously it was described abroad. Mr. F. Mercier has in the Geological Survey Museum several interesting objects of this material from Northern Alaska, and a number of indian implements are in the Museum of McGill College. During the past year Professor W. P. Blake handed the State Mining Bureau of California, a description of a vein of this mineral which occurs in Tehama County, California, where it can be broken out in pieces four inches thick and larger. When freshly broken the color is sea green, but on weathering it becomes white. This material would also make a valuable ornamental stone, and Professor Blake's discovery leads to the inference that it may be found at many other places on the Pacific coast, since objects made of it have been discovered both in Alaska and in California.

AXINITE.—Axinite in fine crystals was reported by Dr. Bigsby from a boulder of primitive rock at Hawkesbury, near Ottawa.

EPIDOTE.—Epidote is found at many localities, though not in gem form, except when the flesh colored feldspar in the amygdaloidal trap on Lake Superior. This has been polished to form an odd ornamental stone. At the falls of the Mingam River, Que., and in Ramsay township, Ont., is found a peculiar, fine-grained, reddish gneiss, traversed by veins of a pea-green epidote. It is very beautiful when polished. Pale green epidote with quartz is found on the Matane River. That which forms mountain masses in the Shickshock Mountains, Que.,* is hard, susceptible of a high polish, and would be of value as an ornamental stone.

MICROCLINE.—Amazon stone (microcline) has been found at Sebastopol,* Ont., and in Hull,* Que., in cleavages of good color.

MOONSTONE.—The Adularia variety of moonstone, similar to the Ceylonese, has not been observed in Canada.

LABRADORITE.—Labradorite, the most beautiful of all the chatoyant feldspars, exists in great quantities on the coast of Labrador,* especially at Nain and on St. Paul's Island adjacent to it, where the finest known occurs in veins of some size, whence for over a century it has been brought by the ton for use in the arts. It occurs on Lake Huron, Ont., at Cape Mahul, and the roth range of Abercrombie, Que.,* in fine cleavages several inches in diameter and of rich color, showing beautiful blue opalescence, at Morin, Que.* In Lewis County, New York, it is extensively quarried for building purposes, and polished into columns and other objects for interior decorations.

PERISTERITE.—This beautiful variety of albite exhibits a peculiar bluish chatoyancy or opalescence, sometimes mingled with pale green and yellow, and called "moonstone." It is found in crystals and by the ton in large cleavable masses, containing disseminated grains of

* Specimens from the localities marked with an asterisk are in the Geological Survey Museum, Ottawa.

† Specimens of a rich yellow jasper from Pt. La Lime, Restigouche County, N. B., are in the Survey Museum, Ottawa.

‡ A specimen of this mineral from Cathcart Point, Lake Superior, is in the Geological Survey Museum Ottawa.

quartz in veins cutting the Laurentian strata at Bathurst,* Ont., also in crystals on the north side of Stony Lake, near the mouth of Eel Creek, in Burleigh, Ont., in large opalescent cleavable masses of reddish albite, and on the 9th line or concession north of Perth, Ont., on the land of Robert McEwen. This beautiful material is especially adapted for use in the arts.

It is also reported by Mr. Hoffmann in large specimens, one foot across, showing beautiful blue chatoyancy, from Villeneuve,* Ottawa Co., Que.

PERTHITE.—Perthite occurs in large cleavable masses in thick pegmatite veins, cutting the Laurentian strata and is often made up of flesh-red and reddish-brown bands of orthoclase and albite, inter-laminated. When cut in certain directions it shows beautiful golden reflections like aventurine, and being susceptible of a high polish, is adapted for an ornamental stone or for use in jewelry. It is also found in considerable quantity at Burgess,* Ont., about seven miles southwest of the town of Perth, and near Little Adams Lake on what was formerly called Dobey Farm.

SUNSTONE.—Sunstone, aventurine felspar, has been described by Dr. Bigsby in the form of a largely crystallized flesh red felspar, constituting part of a granitic vein traversing gneiss, 20 miles east of the French river, on the northeast shore of Lake Huron, and occurs in fine specimens at Sebastapol,* Ont.

OBSIDIAN.—Obsidian has been found in British Columbia,* but it has little value except for the cheaper jewelry, and is rarely used for that purpose.

PORPHYRY.—The porphyries which cut the Laurentian limestones in the Townships of Grenville* and Chatham,* Que., form a dike running east and west 20 feet in breadth. They have a dark green or brownish black base, homogeneous and compact, containing crystals of red orthoclase, and admitting of a high polish, which strongly recommends it for use as an ornamental stone.

GRAPHIC GRANITE.—The pegmatite at Montgomery's clearing on Allumette Lake, five miles above Pembroke, Ont., consisting of a brownish-red orthoclase with white quartz is a beautiful ornamental stone, and admits of a good polish.

IDOCRASE.—Idocrase in wax-yellow crystals imbedded in limestone is found in Grenville, Que., in crystals of remarkable perfection and rich brown color, in a white calcite near Wakefield,* Que., on Frye's Island,* N. B., and in large brown crystals at Calumet Falls, Que. Some of those would cut small gems, for which there is slight demand to represent the initial "I" in sentimental jewelry.

PYRITE.—Pyrite is found at many localities, but nowhere in great perfection. It was extensively cut and polished for jewelry a century ago, but was superseded by the introduction of steel jewelry.

HEMATITE.—Hematite (specular iron) occurs finely crystallized at Cape Spencer, and exceptionally perfect and brilliant at Digby Neck, N. S., Sussex, Kings County and Black River, St. John's Co., N. B. This fibrous form of red oxide of iron is extensively worked into jewelry in England and Germany, but it has not been found of sufficient value in Canada to warrant working, as it can be cut so much more cheaply abroad. All the hematite jewelry of the Lake Superior region is believed to be not only of foreign workmanship but foreign material.

OLIVINE.—Although olivine, chrysolite or peridot, as it is variously known, is found at a number of localities as a rock constituent, and often in the form of imperfect olive amber-colored crystals one-half inch in diameter, at Mount Royal, Montarville,* Mount Albert and Rougemont, Que.; it has not yet been observed of sufficient clearness and perfection to afford gems.

ANDALUSITE.—The andalusite found on Lake St. Francis in small flesh-red prisms not exceeding one-tenth of an inch in diameter, and also in black crystals, and the variety known as *chiastolite macle*, or cross stone, is sold abroad for use in jewelry. It also occurs at Guysboro,* N. S., in fair macles.

PYROXENE.—The deep chrome green pyroxene found at Orford,* Que., is of special interest. Many fine crystals have been found.

Occasionally they are transparent and would afford gems. The lilac-colored variety from Grenville,* Que., does not admit of a fine polish.

STAUROLITE.—Staurolite has been found at several localities in Nova Scotia, more especially at Guysboro.* The mineral when in perfect crosses finds some sale for charms in Switzerland. A legend, believed by many inhabitants of Brittany, attaches a symbolic meaning to them representing that they have been dropped from the sky.

DIOPSIDE.—Diopside is found as a rock constituent at many localities in the Laurentian area. At Calumet Falls, Que., it occurs in crystals six inches long though not of gem value.

SCAPOLITE.—Scapolite, wernerite, occurs in large cleavable masses in a limestone at Grenville,* Que., and Bathurst, Ont. When free from the lilac-colored crystals of pyroxene with which it is associated it admits of a good polish, but is of little value in the arts.

ILVAITE.—Ilvaite was found in a boulder nearly a foot in diameter, in the vicinity of Ottawa, Ont.,* and is believed to form a bed in the Laurentian series. It has little value as a gem, but is occasionally used for the letter "I" in sentimental jewelry.

SODALITE.—Sodalite in fine blue grains has been found in the granite of Brome, Que., and at Kicking Horse Pass,* B. C., in seams at Montreal,* Que., and in veins several inches wide on the line of the Canadian Pacific Railway, by Dr. B. J. Harrington. It is occasionally used in the arts.

LAZULITE.—Lazulite is reported from the Hudson's Bay district, but of little gem value, even when it is of fine color.

KYANITE.—Kyanite has been found in Vermont adjacent, but has not been observed in Canada.

PREHNITE.—Prehnite is associated with native copper and calcite in the Lake Superior region,* where it is often of a rich green color in spherical masses of crystals an inch across, or in aggregations even larger affording a curious but pleasing green stone resembling a chrysoprase. Prehnite in fine specimens occurs at Clifton, Clark's Head and Black Rock, King's County, N. S.

TITANITE (Sphene).§—The titanites of Canada have a world-wide reputation, not only for their color, polish and the perfection of the crystals but also for their great size. A twin crystal of this mineral has been found on Turner's Island, in Lake Clear, weighing 80 lbs. They are found abundantly in this region, associated with apatite. The crystals are generally of such deep brown color as to appear black, and it is rare that even a small transparent gem could be cut from them. As crystals, however, they are unexcelled, and many thousand dollars' worth has been sold as specimens. The finest are found in Renfrew County, especially in Sebastapol* and Brudenell* Townships, Ont. Yellow crystals have not been observed as yet.

ZONOCHELORITE.—Zonochlorite, which Hawes chemically proved to be an impure variety of prehnite, is yet distinctive enough as a gem stone to entitle it to its name. It occurs in small rolled masses and in the rock at Nepigon Bay, Ont.; and was described by Dr. A. E. Foote. It is a dark, opaque green stone, beautifully marked and veined, and admitting of a high polish, and ought to find some sale as a local or tourists' gem.

CHLORASTROLITE.—Chlorastrolite, while not occurring on the north shore of Lake Superior, is found at Isle Royale, and Michipicoten Island.* This beautiful, stellated gem stone, which is sold to a considerable extent as an ornamental stone on all sides of the lake, is of purely American occurrence.

THOMSONITE.—Thomsonite of a flesh-red color, compact and fibrous, often banded with green in a number of concentric rings, is found on the northern shore of Lake Superior, Ont., and Cape Split,* N. S. The pebbles vary in size from one-eighth of an inch up to one inch across, and are quite extensively sold on all sides of the lake as an ornamental stone. The pebbles when polished find a ready sale

§ Fine specimens from Grenville and Hull, Que.; S. Sherbrooke, Ont.; and of a variety almost white from Brome, Que., are in the Geological Survey Museum, Ottawa.

among the tourists who frequent that region. The green which Peckham and Hall described as lintonite, an uncrystalline green variety of thomsonite, often forms the center or band, making an effective gem stone, and is sold for the same purposes.

ILMENITE.—The ilmenite in the parish of St. Urbain,* at Baie St. Paul, sometimes contains grains of a greenish triclinic felspar and would furnish an ornamental stone similar to the porphyritic menaccanite found at Cumberland, Rhode Island. It also contains rutile crystals, too small, however, to have value as gems, though adding to the beauty of the material when polished.

LAPIS LAZULI.—Lapis Lazuli is specially mentioned in nearly all the early government grants as one of the gem stones reserved for the Crown, but as yet it has not been observed at any North American locality.

NATROLITE.—Natrolite is found in stout crystals with other zeolites at Peter's Point and other localities on the Bay of Fundy,* and at Swan's Creek, Cape Blomidon, and Partridge Island, N. S. When transparent, and of sufficient size, it is occasionally used as a gem to represent the initial "N" in sentimental jewelry.

APOPHYLLITE.—Apophyllite is often found along the coast of Nova Scotia on the Bay of Fundy,* principally at Cape d'Or, Isle of Haute, Partridge Island, and Swan's Creek just above Cape Blomidon, in magnificent crystals sometimes one inch or more across. It occasionally occurs on agate and amethyst in the trap rock, and would afford a mineralogical gem, as the pearly luster produces a curious effect like that of a fish's eye, hence the name ichthyophthalmite, or fish-eye stone. The color is generally white, but occasionally the crystals have a rich green tinge.

MONAZITE.—Hoffmann has described a part of a crystal, weighing fourteen pounds, from Villeneuve,* Ottawa Co., making this one of the most remarkable occurrences known. If transparent it would afford a hyacinth yellow gem, rather low in hardness.

APATITE.—This mineral, which has added so much to the mining industry of the Dominion, is found in greater quantity and in finer crystals than in any other country. The crystals are often of great size and perfection, one famous crystal from the Emerald Mine, at Buckingham,* Que., weighing 550 lbs. Magnificent crystals are found throughout Eastern Ontario on the shores of Lake Clear,* several feet in length and of fine color; at Sebastopol,* and elsewhere throughout Renfrew County,* and at Wakefield,* Templeton,* Portland* and Buckingham Townships*, Ottawa County, Que. The crystals are often partly transparent, and are of all shades of red, brown, brick-red, and often rich, deep green, especially in Ottawa County, in which case they ought to have some of the uses of fluor spar as ornamental stones.

WILSONITE.—Wilsonite is found at Bathurst* and Burgess,* Ont., and Ottawa County,* Que., in masses of some size, associated with scapolite. The specimens are beautiful, the minerals often passing into each other. The rich, purplish-red color of this mineral, and the fact that it admits of a good polish, make it one of the most interesting of gem minerals.

FLUORITE.—Fluorite is occasionally found in purple crystals measuring several inches on a face, associated with and on the Lake Superior amethyst. Green and purple fluor often fills mineral veins in the Lake Superior region,* and veins in syenite opposite Pic Island, on the mainland. On an island near Gravelly Point, in a porphyry, it occurs in green octahedral crystals, with barite; in green cubes associated with calcite and quartz, at Prince's Mine, Ont., and in small beautiful crystals near Hull,* Que. Fluor spar of a beautiful blue color is found at Plaster Cove, Richmond County, N. S., and also on the west side of the harbor of Great St. Lawrence, Nfld. Small purple crystals of great beauty are occasionally found on pearl-spar in the geodes at Niagara Falls, Ont., and elsewhere in the Niagara formation.* A green, compact variety occurs in white calcite associated with galena, in veins cutting the Potsdam sandstone at Baie St. Paul and Murray Bay, Que. This could be worked into an

ornamental stone. It is frequently found all through the Laurentian rocks. When transparent, the various colors are called purple (false amethyst), yellow (false topaz) and green (false emerald). It is rarely cut into mineralogical gems, but when compact, of good color, or beautifully veined, it is worked into vases, cups and other ornamental objects, known as Blue John, Derbyshire, Spar, etc.

MALACHITE.—Malachite of gem value has not been found to any extent in Canada, although it occurs in nearly every locality where copper and its ores are obtained. It has been observed at Sutton,* Que.

AGALMATOLITE.—The agalmatolite found in Canada is not of such quality as to fit it for the uses of the Chinese figure stone.

JET.—Jet is found at Pictou, Pictou County, N. S., in fine pieces. It has been pretty much superseded in jewelry by black onyx, and the little now used is mined at Whitby, Eng., owing to its superior hardness, and the perfect facilities for working it there.

Further reference to this subject can be found in the following works:—"Remarks on the Mineralogy and Geology of the Peninsula of Nova Scotia," by Charles T. Jackson and Francis Alger, Cambridge, 1832, 4to., page 116; "Geology and Mineralogy of Nova Scotia," Abraham Gessner, Halifax, 1836, 8vo., page 272; "Catalogue of the Mineral Localities of New Brunswick, Nova Scotia and Newfoundland," from the *American Journal of Science and Arts*, II. Series, Vol. XXXV., 1863, page 8; "Mineralogy of Nova Scotia," by Henry How, Halifax, N. S., 1868, 8vo., page 217; "Geology of Canada—Report of the Geological Survey from its Commencement to 1863," Montreal, 1863, 8vo., page XXVII., 983; "The Mineral Resources of the Dominion of Canada," Ottawa, 12mo., page 72; "Descriptive Catalogue of a Collection of Economic Minerals of Canada at the Philadelphia International Exhibition," Montreal, 1876, 8vo., page 152; "The Woods and Minerals of New Brunswick at the Centennial Exhibition at Philadelphia," Fredericton, N. B., 1876, by L. W. Bailey and Edward Jack, 12mo., page 51; "Dana's Mineralogy," 5th Edition, 8vo., New York, page 827; "Descriptive Catalogue of a Collection of the Economic Minerals of Canada at the Colonial and Indian Exhibition, London, 1886," by the Geological Corps, Alfred R. C. Selwyn, Director, London, 8vo., 1886, page 172.

The Writer is indebted for information to Messrs. E. Coste and H. P. Brumell, of the Canadian Geological Survey, Rev. Dr. Honeyman, of Windsor, N. S., and Mr. C. D. Nimms, the indefatigable mineral collector of Philadelphia, New York State.

The Coming Watchmakers and Jewelers.



THE COMMUNICATION, elsewhere printed in this issue, of Mr. William Foster, of Waltham, will be found full of interest by practical workmen. We hope to receive from him, for future publication, a series of letters showing what the manufacturers and workmen of Waltham are doing to advance the standard of work in this country. Mr. Foster's article brings up once more the old question as to how the workmen of the future are to be supplied. He draws a very clear distinction between the workman of the past and the modern workman, but at the same time says that there is a large number of the old fossils left yet, who do not believe in new fangled ideas, and are still working away with the primitive tools that advanced workmen cast aside years ago. He alludes to the superiority of the tools with which workmen with progressive ideas surround themselves, and how much these contribute to the facility and accuracy with which they do their work. The young men who are being trained up to the business, and expect eventually to take the places of the present workmen, should have every advantage in the way of improved tools and methods that it is possible to give them. It is largely for this reason that a national school of instruction

should be established, where young men can be taught the art and science of watchmaking under the most favorable conditions. Such a school would, necessarily, be equipped with the most improved tools of modern days, and pupils would be instructed in their use by competent teachers. Not long since, an old jeweler remarked that he had recently purchased one of the improved benches, containing a new lathe with all its modifications, and said that there was not a man in his establishment that understood the lathe thoroughly, or who had ambition enough to study its combinations. They used it so far as they knew how, but their knowledge of lathe work was limited to the old style of "fiddlebow" lathe which they seemed to think was good enough for all practical purposes. We do not think a majority of workmen are so indifferent to their own welfare or that of their employers as to be unwilling to adopt marked improvements in methods, but there are undoubtedly too many who are content to jog along in the ruts their grandfathers traveled, looking forward only to pay-day, and caring little to perfect themselves in their art. With such men as these for instructors of the coming watchmakers and jewelers, little can be expected for the future; nor can it be expected that the average jeweler, be he never so good a workman himself, can or will afford the time and expense necessary for the thorough instruction of young men in the art of watchmaking. To supply themselves with the most improved machinery and tools would necessitate the discarding of much that they already have and that serves their purpose well enough, but which should not be used for the instruction of beginners if there is something better. A workman may impart to a young man all that he knows of the trade himself and his pupil still be far from an expert workman. The best musicians and artists are not those who blindly follow the style of any one person; they study all masters, and use their knowledge drawn from various sources according as their own genius dictates. So in the education of the watchmakers and jewelers of the future, they should have a variety of masters, each teaching that in which he is especially expert, in order that their pupils may be thoroughly equipped with the knowledge which will make them competent and trusted workmen. The demand for such is daily increasing, while the supply is becoming scarcer. A national training school for teaching thoroughly all the branches requisite to make competent watchmakers and jewelers is fast growing to be a necessity. Such a school should be established by the trade, endowed by it, and equipped with the most improved tools and machinery and a full corps of competent teachers. Such a school would be well patronized from the first, and, we firmly believe, would be self-sustaining within five years of its establishment. Other countries have such schools and they have been of the greatest service, but in this country the great body of the trade has manifested little interest in the subject, leaving to private individuals the task of training the coming workmen, which training, from the very nature of things, cannot be thorough and complete



URING the past generation there has grown up in this country a large and reputable class of itinerants known as commercial travelers; men who travel almost constantly on business and not for pleasure. Few of these men, numbering, all told, some 250,000 according to the latest estimate, are able to return to their places of residence at election time to vote, and hence the majority are virtually disfranchised by an accident of calling. The consequence is that the drummer has too much cause to regard himself as a sort of homeless pariah, a political nonentity, without the ordinary ties and responsibilities of the full fledged citizen. The evil effects are apparent, and so plain a violation of the spirit of our constitution should not be longer tolerated. Our election laws were made long before this class of commercial ambassadors was foreseen, and are

therefore inadequate to meet present conditions. To disfranchise a man because he is a professional traveler is no more just than it is to disfranchise him because of his color or some other accident of birth. The fact that the anomaly has gone unchallenged so long furnishes an instance of the baleful tyranny of the past over the thought and action of the present, even in this republic of ours, where of all governments the most elasticity of law and custom should be found. We regard our forefathers' sayings and doings, admirable as they may have been for that time, as beyond criticism to-day, and just as perfectly adapted to our wants as the mandates of an infallible church are to its devoted followers. Laws need to be changed in progress of time, particularly in these Protean days. There is need of more reason and less of blind reverence. If we look at the facts before us clearly in the light of reason, we cannot fail to see that a revision of the law is needed. It is certain that means might be devised of forwarding ballots from a distance properly identified and attested by a notary or other official. The cause is worthy the espousal of the Commercial Travelers' association which has recently done such valiant service in demolishing the old superstition of the Drummers' Tax. Here is something of loftier emprise than the securing of special fares and privileges. Here is a right to contend for.

Fashions in Jewelry

A Lady's Rambles Among the Jewelers.

LOVERS of handsome jewelry have never had a better opportunity for gratifying fastidious tastes than at the present time. The shops are full of new and beautiful designs, representing both foreign and domestic manufactures, and including all articles that come under the head of personal adornments. In this lavish display of new goods brooches are a conspicuous figure, and have evidently received much thought and attention from both designers and manufacturers, the new patterns being many and varied.

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AMONG the most curious designs in brooches now in the market is one in the form of an open album, showing a small photograph in each side. Another is a gold knife-edge bar, in the center of which is perched a "polly," radiant in colored enamel, and attended at each end by a smaller specimen of the feathered tribe, all with tiny diamond eyes.

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BROOCHES, with centers of enamels portraying mythological scenes and exquisitely painted, are set in renaissance designs of garlands and flowing forms composed of gold and diamonds.

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FOUR-LEAVED clovers reproduced in green enamel are among the most artistic specimens of flower brooches.

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AN INEXPENSIVE and pretty brooch is one of celluloid carved into roses and mounted upon silver.

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WHITE enamel tracery combines with precious stones in one of the most tasteful and unpretentious brooches of the season. One of

them has for the center a large, square emerald ; surrounding it are spray-like forms of white enamel enclosing a diamond, diamonds in turn enclosing these.

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BROOCHES in the form of bees and insects are still to be seen one of the most favored being the butterfly, which will doubtless remain a standard design, ranking equally with the star and crescent.

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EARRINGS are shown in many varieties of form, though the large single stone earrings are still preferred by all who can afford to indulge in fine solitaires.

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MOONSTONE heads of a pinkish hue, set in an engraved gold dollar, have been adapted to earrings.

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A VERY handsome and becoming style of earring is the hoop, whether of plain gold, enameled, or set with gems.

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THE EAR-SCREW finds greatest favor among young ladies and misses. It is frequently set with small diamonds, sapphires, and other gems. Another favored style represents a single small flower, as a forget-me-not or violet.

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THERE is a great fancy just now for uncut and polished rubies and sapphires, pearls, moonstones, and cat's-eyes, mounted as simply as possible on red-gold hoop rings, one of these stones being coupled with a diamond by means of two tiny links.

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A GOLD ball having upon the front a pansy in delicate enamel is the newest thing in earring covers.

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RINGS of Roman gold set diagonally with very small rubies or pearls are mounted into attractive earrings of comparatively small cost.

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EARRINGS in the shape of a horseshoe, composed of pearls and turquoises, are much liked by young ladies and misses.

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SMALL enamelled strawberries for earrings are quite new and pretty.

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BRILLIANTS are arranged *en revières* with no apparent setting, the stones being either mounted on a silver thread, fine as a hair, or attached together by links of platinum, that are only visible on close inspection. This arrangement of brilliants is very effective with full dress toilettes, and when placed in the lace at the corsage, gives the impression of being a part of the same.

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ONE of the prettiest and at the same time convenient additions to the feminine arsenal, is the pocket mirror. Some of these are quite flat, and either round or oval, the glass sliding out sideways from a frosted or hammered gold case.

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THE POCKET comb with moustache brush, for gentlemen ; pen-

knives, book markers, pocket scissors, and button hooks are all now sold by jewelers, and are mounted or cased in one or other of the precious metals.

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AMONG the handsomest presents received by the Princess Letitia on the occasion of her marriage to the Duke of Aosta, was a diadem ornamented with one thousand two hundred diamonds. Another costly diadem of pearls, having in the center one enormous diamond, was presented by the Empress Eugenie.

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A TOILETTE set consisting of ten pieces of massive silver plate, delicately hammered and chiseled, and then gilt, was one of the most conspicuous presents. The set includes a mirror supported on an eagle with extended wings, a pair of bon-bon boxes, and two oblong boxes ornamented by branches of myrtle, a couple of trays for letters, a pair of candelabra with three branches, each resting on an eagle, and a basket delicately chased with garlands of roses and violets.

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AT A fashionable wedding in New York recently, the bridegroom gave each of the bridesmaids a gold bangle bearing 1888 in pearls.

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NUMBERED with attractive ornaments seen recently was an effective and striking bracelet consisting of a plain gold band, ornamented on the top with a bent horseshoe set with sapphires and diamonds, placed diagonally.

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THE DAINTIEST thing in bracelets is composed of several tiny gold wires twisted, with forget-me-nots scattered over it.

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PEN HOLDERS of silver bearing the owner's initial on the top, are something new.

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FOR A stamp holder a silver box representing a domino is both convenient and ornamental.

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A SILVER trowel with a cut in the center to hold the leaves, is a new book mark.

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WHISTLES are made of two coins placed back to back, and can be easily carried in the pocket.

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PATRONS of the "L" roads will find the silver boxes, from which tickets are emitted one by one, a great convenience.

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SILVER cigarette cases, plain in finish, and ornamented by an oxidized silver wire initial in the upper left hand corner, are very attractive.

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FOR INFANTS' use is a small silver implement in the shape of a snow plow, to take the place of fingers in taking food from the plate.

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MANY of the New York jewelers have adopted the custom of hav-

ing their rings on little steel bars when showing a tray full of the valuables to a customer.

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A HEAVY gold shank with the ends terminating in gems, such as a diamond and pearl, or ruby and sapphire, makes an effective ring for gentlemen.

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ANOTHER style of ring much worn by men is the knot and curb ring, the ring being formed by a chain knotted on the top. These are seen in both gold and silver.

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SEAL rings are worn by both sexes, but the seal should be small.

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RINGS set with diamonds in combination with other stones are very popular, the one most favored being the diamond and pearl.

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NEW and taking rings have square settings, with a row of rubies running down the center and diamonds on either side.

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ALL THE semi-precious stones, such as quartz, tiger's-eye, Labrador stones, uncut topazes and amethysts, besides aquamarines, yellow diamonds and garnets, continue to be largely employed by jewelers. These are set in bracelets, and small round brooches encircled with diamonds; they are also similarly employed as ornaments for the hair, when they are mostly chosen conical in shape; they appear too in the handles of umbrellas and sticks, and finally in the tops of scent bottles.

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A PISCATORIAL umbrella handle, is a fish in silver, with large emerald eyes; the body of the fish being in the quilted pattern, with tail and head plain in finish.

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ORNAMENTAL hairpins are in great demand just now, owing to the elaborate style of dressing the hair which is being introduced. These hairpins come in all sorts of odd shapes and fancies.

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A SHELL hairpin recently seen at a fashionable jeweler's, was in the form of an ordinary hairpin; about the top of this was coiled a serpent, richly enameled in red and purple, the head protruding a little, and set with one large diamond.

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A THISTLE made of silk floss and sprinkled over with diamonds, resting on a plain gold leaf, makes about as handsome a hair ornament as has been seen.

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ANOTHER very attractive hairpin is a loop of diamonds joined to a loop of pearls, attached to a straight gold pin.

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A STILETTO of burnished gold with diamond handle is a novelty in hairpins.

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WHILE bridesmaids' presents vary considerably, hairpins seem to be one of the most popular gifts, the pin being of tortoise shell, and the ornament at the top a true lover's knot, or a sword hilt in diamonds or pearls.

OTHER novelties in hair ornaments include butterflies in very fine filigree work; a large opaque amber ball studded all over with transparent stars, and a number of graduated insects covered with diamonds, rubies and sapphires, mounted upon an invisible gold wire.

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THE WATCH wristlets with the small silver watch (which can be taken out at will) fitted in little grandfather's clocks, and old silver buckles, all continue to hold favor with the public.

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A POPULAR style of silver belt appears in basket pattern.

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PHOTOGRAPH frames in worked silver are in general use now. It is quite the fashion to dedicate one small table in the drawing-room to frames of all sorts and sizes, and showing specimens of different workmanships in silver.

ELSIE BEE.



[FROM OUR SPECIAL CORRESPONDENT.]

ATLANTA, October 14, 1888.

The jewelry trade in the South is opening up very nicely. The dull summer months have passed, and the mellow October season has brought life and activity for almost everybody. Large consignments of goods have been received by the merchants of Atlanta, and several large importations are yet to come. It is safe to say that the jewelry trade will be up to the highest notch within the next few months. Already the stores are full of choice goods and well selected *biic-à-brac*, and the outlook is favorable indeed. Reports from the various parts of the southeastern States, are to the effect that a large amount of goods will be sold this season.

The country, now, is considerably excited over the "watch club" plan of selling watches. This "plan" has just struck the South, and it looks as if everybody was going to buy a watch. From what I understand about it, the system is conducted quite differently to that carried on in the Middle and Northern States. The objectionable features these clubs have in the States mentioned, have been, to a considerable extent, eradicated from the club system in the South. Mr. H. R. Cauldfeld, a resident of Philadelphia, conceived the idea of going South and organizing clubs for the local dealers. This he has and is doing very successfully in all the large towns of Virginia, Carolinas, Georgia, Alabama and Louisiana. If watches and diamonds must be sold in clubs, it is evident that this way—through the local dealers—is the way to go at it. Mr. Cauldfeld has about thirty experienced watch salesmen at work for him, and is doing a magnificent business.

Mr. Fred. Stilson presented the beautiful cup that was lately contested for at De Gise's Opera House, for the benefit of the yellow fever sufferers. Mr. Stilson is a noble, whole-hearted gentleman.

Freeman & Crankshaw have magnificent displays in their windows. They always attract the passers-by. Their business is very satisfactory.

Mr. L. Snider, at 10 Marietta street, has opened a branch store on Whitehall, and is filling it full of pretty goods. His line of jewelry is, for quality, equal to the best, and he is making a name for himself.

Mr. Geo. T. Beeland, of Macon, is a young man who is forging

his way to the front. His store is one of the prettiest in the Central City, and he numbers his friends by the hundreds.

Mr. R. O. Randall, of Gadsden, Alabama, is fully up to the times in his trade, and is what you may call a live, pushing, jeweler merchant.

Doering & Robinson, of Anniston, Alabama, are doing a good business. Their trade has been affected very little by the yellow fever scare, and they are forging right ahead.

Mr. Phil. Harris, at Albany, Georgia, is one of the solid boys and supplies a large and increasing trade.

S. M. Snider & Co., of Greenville, South Carolina, have a beautiful store and a rich country to draw from. Their trade is, therefore, necessarily very good.

Mr. Paul Paille, of Griffin, frequently makes his way to Atlanta, and he always comes with good and cheerful news. He is always hopeful and business is never dull with him.

Mr. Joseph Jerger, of Thomasville, Georgia, is the right man in the right place, and has a monopoly that few jewelers have.

T. J. K.

Use of Gold and other Metals in Ancient Chiriqui.

BY WILLIAM H. HOLMES.*

Continued from page 92, October, 1888.



IN DISCUSSING possible processes, Mr. William Hallock, of the division of chemistry and physics of the United States Geological Survey, suggested that, if the various sections of a metal ornament were imbedded in the surface of a mass of fire clay in their proper relations and contacts, they could then be completely inclosed in the mass and subjected to heat until the metal melted and ran together; after cooling, the complete figure could be removed by breaking up the clay matrix. I imagine that

in such work much difficulty would be experienced in securing proper contact and adjustment of parts of complex figures. It will likewise be observed that evidences of plasticity in the modeling material would not exist. I must not pass a suggestion of Nadaillac¹ which offers a possible solution of the problem of manipulation. Referring to a statement of the early Spanish explorers that smelting was unknown to the inhabitants of Peru, he states that it would be possible for a people in a low state of culture to discover that an amalgam of gold with mercury is quite plastic, and that after a figure is modeled in this composite metal the mercury may be dissipated by heat, leaving the form in gold, which then needs only to be polished. There is, however, no evidence whatever that these people had any knowledge of mercury.

There is no indication of carving or engraving in the Chiriquian work. In finishing, some of the extremities seem to have been shaped by hammering. This is a mere flattening out of the feet or parts of the accessories, which required no particular skill and could have been accomplished with comparatively rude stone hammers. It is a remarkable fact that many, if not most, of the objects appear to be either plaited or washed with pure gold, the body or foundation

being of base gold or of nearly pure copper. This fact, coupled with that of the association of objects of bronze with the relics, leads us to inquire carefully into the possibilities of European influence or agency. I observe that recent writers do not seem to have questioned the genuineness of the objects described by them, but at the same time no mention is made of the plating or washing. This latter circumstance leads to the inference that pieces now in my possession exhibiting this phenomenon may have been tampered with by the whites. In this connection attention should be called to the fact that history is not silent on the matter of plating. The Indians of



Fig. 2. Human figure, formed of copper-gold alloy.

New Grenada are not only said to have been marvelously skilful in the manipulation of metals, but, according to Bollaert, Acosta declares that these peoples had much *gilt* copper, "and the copper was gilt by the use of the juice of a plant rubbed over it, then put into the fire, when it took the gold color."² Just what this means we cannot readily determine, but we safely conclude that, whatever the process hinted at in these words, a thin surface deposit of pure gold, or the close semblance of it, was actually obtained. It is not impossible that an acid may have been applied which tended to destroy the copper of the alloy, leaving a deposit of gold upon the surface, which could afterwards be burnished down.

It has been suggested to me that possibly the film of gold may in cases be the result of simple decay on the part of the copper of the



Fig. 3. Grotesque human figure in gold, from Bollaert.

alloy, the gold remaining as a shell upon the surface of the still undecayed portion of the composite metal; but the surface in such a case would not be burnished, whereas the show surfaces of the specimens recovered are in all cases neatly polished.

If we should conclude that the ancient Americans were probably able to secure in some such manner a thin film of gold it still remains to inquire whether there may not have been some purely mechanical means of plating. In some of the Chiriquian specimens a foundation of very base metal appears to have been plated with heavy sheet gold, which as the copper decays comes off in flakes. Occasionally pieces

* The right to reprint this article has been kindly given us by Dr. W. H. Holmes, of the Bureau of Ethnology, Washington, D. C.

¹Nadaillac, *Prehistoric America*, p. 450.

²Bollaert, *Ethnological and other Researches in New Grenada*, etc.

have a blistered look as a consequence. Were these people able with their rude appliances to beat gold out into very thin leaves, and had they discovered processes by which these could be applied to the surface of objects of metal?

The flakes in some cases indicate a very great degree of thinness. Specimens of sheet gold ornaments found in the tombs are thicker, but are sufficiently thin to indicate, if actually made by these people,



Fig. 4. Rudely shaped and finished human figure.

that almost any degree of thinness could be attained. It would probably not be difficult to apply thin sheet gold to the comparatively smooth surfaces of these ornaments and to fix it by burnishing.

Mr. Kunz suggests still another method by means of which plating could have been accomplished. If a figure in wax were coated with sheet gold and then incased in a clay matrix, the wax could be melted out, leaving the shell of gold within; the cavity could then be filled with alloy, the clay could be removed, and the gold, which would adhere to the metal, could then be properly burnished down.

It will be seen from this hasty review that, although we may conclude that casting and plating were certainly practised by these peoples, we must remain in ignorance of the precise methods employed.

Referring to the question of the authenticity of the specimens



Fig. 5. Grotesque human figure, in nearly pure copper, partially coated with yellow gold.

themselves, I may note that observations bearing upon the actual discovery of particular specimens in the tombs are unfortunately lacking. Mr. McNeil acknowledges that with all his experience in the work of excavation no single piece has been taken from the ground with his own hands, and he cannot say that he ever witnessed the exhumation by others, although he has been present when they were brought up from the pits. Generally the workmen secrete them and

afterwards offer them for sale. He has, however, no shadow of a doubt that all the pieces procured by him came from the graves as reported by his collectors.

The question of the authenticity of the gilding will not be satisfactorily or finally settled until some responsible collector shall have taken the gilded objects, and with his own hands, from their undisturbed places in the tombs.

There are many proofs, however, of the authenticity of the objects themselves. It is asserted by a number of early writers that the American natives were, on the arrival of the Spaniards, highly

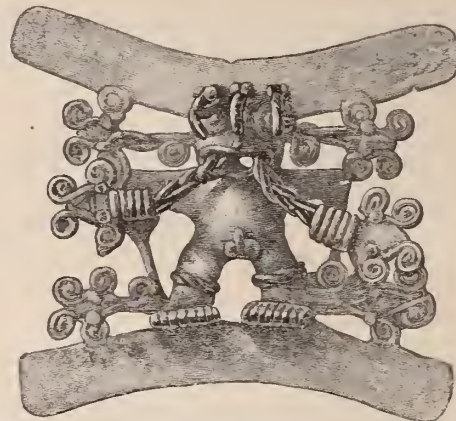


Fig. 6. Grotesque human figure, in nearly pure gold.

accomplished in metallurgy; that they worked with blow-pipes and cast in molds; that the objects produced exhibited a high order of skill; and that the native talent was directed with unusual force and uniformity toward the imitation of life forms. It is said that the conquerors were "struck with wonder" at their skill in this last respect. And a strong argument in favor of the genuineness of these objects is found in the fact that it is not at all probable that rich alloys of gold would have been used by Europeans for the base or foundation when copper or bronze, or even lead, would have served as well. We also observe that there is absolutely no trace of peculiarly European material or methods of manipulation, a fact hardly possible if the extensive reproductions were made by the whites. Neither are there traces of European ideas embodied in the shape and in the decoration of the objects, a condition that argues strongly in favor of native origin. An equally convincing argument is found in the fact that all the alloys subject to corrosion exhibit marked evidences of decay, as if for a long period subject to the destructive agents of the soil. In many cases the copper-alloy base crumbles into black powder, leaving only the flakes of the plating. Lastly and most important, the strange creatures represented are in many cases identical with those embodied in clay and stone, and for these latter works no one will for a moment claim a foreign derivation. In the

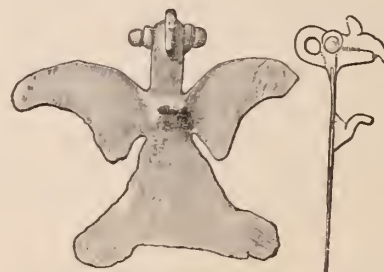


Fig. 7. Rudely executed image of a bird.

October number I present two cuts of objects modeled in clay, intended to illustrate this point.

Considering all these arguments, I arrive at the conclusion that the ornaments are, in the main, genuine antiquities, and that, if any fraud at all has been practised, it is to be laid at the door of modern goldsmiths and speculators, who, according to Mr. McNeil, are known in a few cases to have "doctored" alloyed objects with washes of gold with the view of selling them as pure gold.

I present herewith specimens with a reasonable degree of confi-

dence that all, or nearly all, are purely American products, and I sincerely hope that at no distant day competent archæologists may have the opportunity of making personal observations of similar relics in place.

The objects consist, to a great extent, of representations of life forms, in many cases more fanciful than real, and often extremely grotesque.

They include the human figure and a great variety of birds and beasts indigenous to the country, in styles resembling work of the same region in clay and stone. My illustrations show the actual size of the objects.

The human figure.—Statuettes of men and women and of a variety of anthropomorphic figures of all degrees of elaboration abound. Fig. 2 illustrates a plain, rude specimen belonging to the collection of J. B. Stearns. It was obtained by Mr. McNeil from near the south base of Mount Chiriqui. The body is solid and the surface is rough and pitted, as if from decay. In many respects it resembles the stone sculptures of the Isthmus. The metal is nearly pure copper. A piece exhibiting more elaborate workmanship, and published by Bollaert,³ is shown in fig. 3. Another remarkable specimen is illustrated by De Zeltner, but the photograph published with his brochure is too indistinct to permit of satisfactory reproduction. He describes it in the following language: "The most curious piece in my collection is a gold figure of a man, 7 centimeters in height. The head is ornamented with a diadem terminated on each side with the

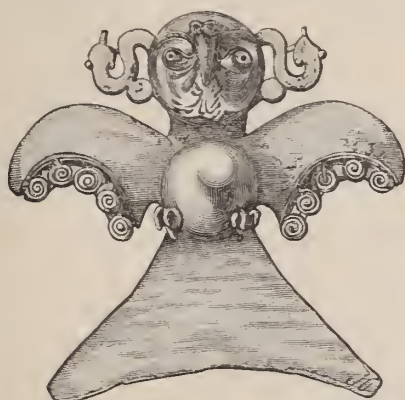


Figure 8. Image of a bird, from Bollaert.

head of a frog. The body is nude, except a girdle, also in the form of a plait supporting a flat piece intended to cover the privates, and two round ornaments on each side. The arms are extended from the body; the well drawn hands hold, one of them, a short, round club, the other a musical instrument, of which one end is in the mouth and the other forms an enlargement like that of a flute, made of human bone. It is not probable that this is a pipe. Both thighs have an enlargement and the toes are not marked in this little figurine."⁴

In fig. 4 we have a rather rudely made and finished piece collected by Mr. McNeil and now owned by Mr. Stearns. It exhibits features corresponding to a number of those referred to by De Zeltner. The foundation is quite thin and is of a base metal coated with pure gold. I present two additional examples of the human figure from the collection of Mr. Stearns. One of them, fig. 5, is an interesting little statuette in dark copper that still retains traces of the former gilding of yellow gold. The crown is flat and is surrounded by a fillet of twisted wire. The face is grotesque, the nose being bulbous, the mouth large, and the lips protruding. The hands are represented as grasping cords of wire which connect the waist with the crown of the figure and seem to be intended for the bodies of serpents, the heads of which project form the sides of the head dress. Similar serpents project from the ankles. The feet are flattened out as if intended to be set in a crevice. The extremities—excepting the

feet—the costume and the ornaments are all formed of wire. The various parts of the figure have been modeled separately and set together whilst the material was in a plastic or semi-plastic condition. This is clearly indicated by the sinking of one part into another at the points of contact.

An excellent example of the more elaborate figures is shown in fig. 6. It is of reddish gold, slightly alloyed, no doubt with copper, and has in finishing received a very thin wash or plating of yellow



Fig. 9. Puma-shaped figure.

gold which is worn off in exposed parts. The central feature of the rather complicated structure is a grotesque human figure, much like the preceding, and having counterparts in both clay and stone. The figure is backed up and strengthened by two curved and flattened bars of gold, one above and the other below, as seen in the cut. The figure is decked with and almost hidden by a profusion of curious details, executed for the most part in wire, and representing serpents and birds. Three vulture-like heads project from the crown and overhang the face. Two serpents, the bodies of which are formed of plaited wire, issue from the mouth of the figure and are held about the neck by the hands. The heads of the serpents are formed of wire folded in triangular form, and are supplied with two double coils of wire at the sides, as if for ears, and with two little balls of gold for eyes. Similar heads project from the sides of the head and from the feet of the image.

The peculiarities of construction are seen to good advantage in this specimen. The figure is made up of a great number of separate pieces, united apparently by pressure or by hammering while the material was somewhat plastic. Upwards of eighty pieces can be counted. The larger pieces, forming the body and limbs, are hollow or concave behind. Nearly all the subordinate parts are constructed of wire.

The bird.—Images of birds are quite numerous and vary greatly in size and elaboration. They are usually represented with expanded wings and tails, the under side of the body being finished for show. The back is left concave and rough, as when cast, and is supplied with a ring for suspension or attachment, as seen in the profile view, fig. 7. The owl, the eagle, the parrot, and various other birds are recognized, although determinations of varieties are not possible, as in many cases the forms are rude or greatly obscured by extraneous details. The example shown in fig. 7 is of the simplest type and the rudest workmanship, and is apparently intended



Fig. 10. Figure of a puma in base metal.

for some rapacious species, possibly a vulture. The body, wings and tail are hammered quite thin and are left frayed and uneven at the edges. The material appears to be nearly pure copper, plated with yellow gold. Specimens of this class are very numerous. One, presented in a publication of the Society of Northern Antiquaries, and now in the museum at Copenhagen, is thought to be intended for a fish hawk, as it carries a fish in its mouth. De Zeltner mentions a statuette in gold of a parrot whose head is ornamented with two

³Bollaert's Antiquarian Researches in New Grenada.

⁴A. De Zeltner: Note sur les sépultures indiennes du département de Chiriqui.

winged tufts. Such a specimen may be seen in the collection of Mr. Stearns.

Fig. 8 is reproduced from Bollaert and represents a very elaborately worked parrot.

The puma.—Representations of quadrupeds are quite common; a good example, copied from Bollaert, is given in fig. 9. The animal intended is apparently a puma, a favorite subject with Chiriquian workers in clay and stone as well as in gold. The body is hollow and open beneath, and the fore feet are finished with loops for suspension. A similar piece with head thrown back over the body is shown in fig. 10. The metal in this case appears to be nearly pure copper.



[FROM OUR SPECIAL CORRESPONDENT.]

BOSTON, October 16, 1888.

Between the rainy weather of the last month and the uncertainty attending the coming election, the state of trade is not very encouraging. The month started off well, but, for some reason, since the first two weeks it has been very dull.

A rather startling theory was yesterday propounded to me. It was this—that when the dressmaking and millinery business is good, the jewelry business is poor. The explanation was given that the fair sex doesn't have time nor money enough to tend to both at once. I submit it to the public for verification.

The taste of the public in regard to colored stones has undergone a decided change, even in staid and conservative Boston. Instead of diamonds alone being considered the proper ornaments, rubies, sapphires and emeralds in particular are used in great numbers, sometimes alone, but more often in combination with diamonds. Even the unlucky opal has had the base removed, and is now very often seen at Back Bay receptions combined with diamonds. One of the most elaborate and handsome of these combination pieces that I have seen was a pendant, shown at Palmer, Batchelder & Co's. It was of the "knife-edge" setting, with a handsome opal in the center, with a ruby below and a diamond above, while a sapphire and an emerald were on each side. Between and within these four corner stones were as many small diamonds, two being colorless, while one was canary colored and the other brown.

Mr. Austin Sylvester, of H. & C. Spear & Co., showed me what is probably the largest assortment of silver hollow ware in Boston. A large number of fruit dishes make a noticeable part of the assortment.

The great upheaval that took place last February on the Dueber affair settled down so that everything was apparently smooth, but the rule that an order for cases must accompany each order for movements has never been lived up to, and there is now a movement on foot to abrogate it entirely.

The United States Watch Company has evidently entered on a season of prosperity; they have just placed on the market an open faced stem wind and set 18 sized watch in fourteen grades, both gilt and nickel. A lady's watch, 6 sized, and a hunting case, 18 size, will be ready in gilt and nickel, with several grades, by the first of the year. The company will erect in the early spring a wing 125 feet long, four stories high; machinery is now being made for this addition. The present facilities are enough for about sixty watches a day, and orders are three months ahead. The American Watch Company had brought suit against the United

States Company for infringement of some valuable patents, but has withdrawn the suit without its coming to a trial.

The jewelry store of Mr. M. M. Maynard, No. 16 Brattle Square, was robbed the other afternoon of \$1,200 worth of watches and jewelry. Strangely enough, too, the theft was accomplished in broad daylight. The proprietor left the store shortly after 2 o'clock and within an hour returned to find that the thieves had entered through a transom over the door, using a step-ladder. Forty gold watches and seventy-five silver watches were gone with a quantity of valuable chains.

The Boston police are closely watching the pawn shops for a \$375 diamond stud mysteriously stolen from Mr. John E. Golden of Roxbury.

Mr. Alvin True Morrill, of the firm of Morrill Bros. & Co., was married to Miss Ludevica Dimon, of New York, on the 15th inst. The ceremony took place at the residence of the bride's father, Mr. Charles L. Dimon, No. 1891 Madison avenue. The bride wore a costume of ivory satin, with train and pointed corsage. Two little relatives of the bride, Mabel and Minnie Stearns, of this city, were the bridesmaids, and Miss Ella Daly the maid of honor. The best man was Mr. Louis Cheney, of Boston, and the ushers were Captain F. L. Holme, of Brooklyn, Wm. J. Haskins, Geo. W. Livermore and Chas. I. Dimon, Jr. The young couple sailed for Europe on the steamship *Saale* and will remain abroad three months. Prominent features of the wedding costume were a tulle veil, held in place with pearl ornaments, and a diamond pendant, the gift of the bridegroom, worn on a delicate pearl necklace.

LEON.



NE of the provisions of the Republican Tariff Bill recently drawn up as a substitute for the famous Mills Bill, advises the raising of the duty on imported pearls from 10 per cent to 25 per cent. It is rather difficult to see why this chaste and beautiful gem, the popularity of which has of late been increasing here, should have been singled out from its kind to bear the onus of additional taxation. The selection was probably made from motives of policy and through an unwillingness to disturb the much stronger interests engaged in diamond importing, but even with this seeming caution the step was ill-advised.

That tariff taxes should be levied as far as possible on luxuries, to lighten the burden borne by the poor and weak, is, of course, a fundamental axiom generally recognized in political economy, if disregarded in our present tariff schedules. This principle, doubtless, was before the minds of the committee when the increase of duty on pearls was recommended, and on that ground would be defended by them, precious stones being luxuries pure and simple. But when they are to be made subjects of taxation, they present such peculiarities as fairly to entitle them to a separate classification. How the authors of the bill came to overlook these peculiarities it is hard to imagine, but the negligence was inexcusable. On account of their small compass and great value, precious stones and especially diamonds and pearls, offer the strongest possible temptation to the smuggler. Even under the present low duty of 10 per cent. smuggling is constantly going on to the discomfiture of the inspectors and the detriment of the honest importer. If, then, we suffer from a large contraband trade under the slight temptation of a 10 per cent. duty, would not the contemplated increase furnish a far stronger inducement to the clever rogues to run the gauntlet of inspection and intensify the disastrous competition from this source? Besides, would not our wealthy citizens, traveling abroad, be led by ordinary business prudence to buy their pearls for private use there and let their wives and daughters wear them into the country? From such considerations as these we see that the effect of the measure would be so very discouraging as almost to kill the legitimate business of

importing pearls and turn the trade over into the hands of clandestine operators.

The reduction of revenue desired, which in any case could not be large, would be obtained at the cost of so much hardship and injustice to the legitimate trade that it would simply be intolerable. All interested seem to agree that the present duties on precious stones are very well adjusted to the requirements of the case, and are decidedly averse to any further fostering of the "infant industry" of smuggling at their expense.

Advice to Watchmakers' Apprentices.

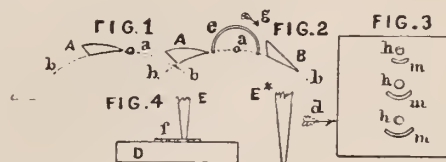
BY A MAN WHO HAS SPENT TWENTY YEARS AT THE BENCH.



HE METHOD pointed out in last article for determining the arc of vibration is so simple that it costs scarcely any time to make the test. The reader must not understand that it is absolutely necessary the balance should vibrate exactly 30 degrees to ensure a good and safe action because escapement makers disagree about the precise number of degrees required; but what is important is that each tooth should impel the balance through the same arc, and not give five or six long vibrations and then two or three short ones. Study over the matter for yourself, and get at the reason *why* such and such effects are obtained. Reason over the matter, making a drawing as well as you can of the parts, and

say to yourself, here are the scape wheel teeth and here is the cylinder; now, if the tooth is outside of the cylinder (as shown in fig. 2) the entering tooth will rest on the outside of the cylinder as shown at *c*. If, now, the cylinder is turned in the direction of the arrow *s* for a degree or two, the point of the tooth will pass the edge of the cylinder, and the wedge or impulse plane of the tooth *A* will impel the cylinder *c* around through an arc of 12 or 13 degrees. Again, if we imagine the tooth resting on the inside of the cylinder, we will have precisely the same action only in a reverse direction. A study of the action, if carefully made, will soon determine what is required in a correct escapement and enable one to remedy any defects. The great point in correcting such defects is to do it in a workmanlike manner, and at the same time expeditiously, as these watches are so cheap one cannot afford to waste time on them. Another very common fault with these watches is in the cap jewel at the upper end of the cylinder, which, instead of being some kind of stone, is simply a piece of bright red glass, into which the pivot soon wears a pit. The reason of this is because the bright red glass looks better than the paler and more unpretending garnet. These imitation jewels should in all cases be taken out and a garnet or some real stone put in place. In setting a cylinder escapement the points of the teeth should pass directly over the center of the pivot hole, as shown at *a*, fig. 1. There has been a good deal of discussion about the proform for the teeth of cylinder scape wheels, some insisting the lifting face should be curved as shown at *A*, fig. 2, others that it should be nearly or quite straight as shown at *B*. At this day it is quite unimportant, as the life of the cylinder watch is bound to be a short one, and all we shall be likely to have of them will be such little cheap trashy affairs like those chatelaines we are at present considering. I spoke of testing the truth of the scape wheel by noticing the arc of vibration required to release each tooth; it is also well to notice the vibrations of the balance, also, after the hair spring is on, and if there is any marked variation in the length of the vibra-

tions. First examine if the points of the scape wheel tooth pass over the center of the lower balance jewel hole, then wind the watch only a little, and if the vibrations are unequal the conclusion must be the scape wheel is untrue. Then remove the hair spring and put the cylinder in place again and wind the watch a little, putting a friction under the balance and testing to see if you can locate the faulty teeth, marking them with the sharpened end of a piece of pegwood touched with rouge and oil. Now comes the methods to remedy the defect. The most frequent cause is where the scape wheel is riveted on to the pinion. The pinion was turned too small, and to remedy this the ends of the leaves of the pinion was forced down hurriedly without proper care, and the wheel thrown out of true as mentioned in former article. This fault is a frequent cause of stoppage, especially when the watch is near run down. In this case, as in most other repair jobs, the first and most essential thing is good judgment, backed up by experience. First, good judgment is required to determine if the watch is safe to let it alone as you find it; you can see the wheel is out of round and the balance varies a little in the arcs of vibration, but it will probably pull through and not stop. Another watch comes in a little more out of true, and the judgment required is to determine quickly on the *safe side*, and then have the skill to remedy the trouble as expeditiously as possible. In some instances a new pinion will be required; in other cases a top pivot will do it if the wheel is put in a wax chuck and trued by touching the tips of the teeth with a sharpened pegwood; this will true up the wheel, when the pivot can be broken off and the pinion drilled and a new pivot inserted, which brings the wheel in round. Other jobs might require a new scape wheel. What I wish to impress on my young readers is the importance of studying what is required and then going about it in a methodical, workmanlike way. It may be well to say that stoning off the teeth is, in almost every instance, to be avoided.



As a rule, even in cheap watches, the scape wheel is all right; the trouble is in the way the scape wheel is set on the pinion. When a scape wheel is not true in the flat, the correct method is to put in a new pinion, but in such cheap trash we must accept the situation and true the wheel on the pinion. It is always risky to attempt this with the fingers or any tool held in the hand, as the wheel is hardened and liable to break. A good method is to provide a brass block into which holes are drilled to receive the pinion and allow the flat lower face of the scape wheel to rest on the surface of the brass block. Such a brass block is shown in figs. 3 and 4, where *D* represents the block. This brass block should be about $\frac{1}{4}$ of an inch thick and $1\frac{1}{4}$ square. The holes shown at *h* are to receive the pinion. The crescent-shaped recesses *m*, shown below the three holes, are cut in the face of the block with a round-bottom graver and are about in the proportion shown, and are intended to give a range from very small to the larger size scape wheels. The way to go about the job is to raise the low side of the wheel by bending the arm on that side upward. This is done by laying the arm to be bent over one of the crescent-shaped incisions and applying a punch as shown at *E*, fig. 4. In this cut *f* represents the scape wheel. The lower end of the punch *E* should be rounded as shown at diagram *E**. The idea is the rounded end of the punch acting over the hollow crescent bends the arm. If the brass block is heated up to about 300° F. there is very little danger of an arm breaking. The crescent form enables us to select a point where the groove is of the proper depth and width. A little practice with an old scape wheel or two will give you all the practice you need.



[FROM OUR SPECIAL CORRESPONDENT.]

KIMBERLEY, Sept. 17, 1888.

Illicit diamond buying still continues and nearly every day an arrest takes place. In few cases do the persons escape conviction and long terms of imprisonment, as they are usually caught red-handed. The elaborate and expensive Detective Department is, however, unable to cope with more than a tithe of offenders who are the cutest scoundrels the world has known. They fatten on the traffic, as their gains are great. Last week a native was convicted of the theft of a diamond he found in the mine and which he had sold for £15 to a European. The stone was a magnificent white gem of 150 karats and is well worth £300. Profit after this fashion is a great temptation to the illicit buyers, and they elude all attempts to break up their rings. Keeping the natives in compounds has a good effect, but the leakage is very great. The cleverest detectives Scotland Yard can furnish have been imported here, but they only get at the smaller fry. Austrians, Italians, Poles and Russians are the most difficult illicit the detectives have to deal with. There is, of course, much dissipation and crime amongst those people and mysterious fatalities are frequent. The knife and the revolver are frequently used, and despite the gains the life of an illicit diamond dealer must be a hard and uneasy one.

The disaster at the De Beer's mine, two months ago, completely stopped work and operations will not be resumed for some weeks. It may be remembered that a fire broke out in one of the shafts causing the death by suffocation of 25 Europeans and about 200 natives. The workings were much damaged and the necessary repairs have occupied much time. About fifty bodies are still in the mine, and if ever recovered it will be in fragments. This is the most serious accident ever recorded here, though fatalities are of almost daily occurrence amongst the natives. So accustomed have people here got to accidents of this nature that they have grown very apathetic and the newspapers scarcely take the trouble to chronicle them. The number of natives maimed and disfigured for life to be seen in the streets is one of the painful spectacles of the fields. Carelessness in the use of dynamite for blasting is a fruitful cause of these sad misfortunes. Many thousands of Europeans and natives have met an untimely end in the getting of diamonds. The De Beer's Company have made notably liberal provision for the wives and families of the Europeans who lost their lives through the fire. As to the natives they were buried and forgotten very speedily. The son of Ham has small consideration here when his end has come.

"Where he goes, or how he fares,
Nobody knows and nobody cares."

A genuine gold fever prevails throughout South Africa, and nearly half the European population are engaged in the development of the gold industry. There is now abundant evidence that the precious metal is richly distributed over an enormous area, and that the time is at hand when the production will be equal to that of any other part of the world, even at the most prosperous periods. As the country extending towards Central Africa is getting explored, the marvellous richness of the gold reefs almost bewilders one. It is now a positive certainty that there is immense scope for gold getting for many years to come, and that the gold supply of the world will be materially affected during the next decade by the production in South Africa.

The diamond fields will attain their majority next year. A proposal is on foot to celebrate or commemorate the occasion by hold-

ing an exhibition, but as yet the project is in embryonic form. Whether it will be carried through or not the next three or four weeks will show. That it could be made a magnificent success goes without saying. Everything pertaining to Kimberley and the diamond industry will always possess a significant interest to South African colonists. From their discovery the diamond fields have exercised a material influence upon every part of the southern portion of this continent. For a comparatively long period many colonial towns were dependent upon them for the prosperity they enjoyed, and were closely associated with them in many important respects. A large portion of the enormous wealth obtained from the different mines became distributed throughout the country, and served to restore a condition of affairs that had to many colonists become very discouraging. When it is considered that diamonds realizing in Europe over forty millions of pounds have been unearthed in Griqualand West, it may well be assumed that the diamond industry has been by far the most important industry South Africa has ever known. The history of these fields has been as marvellous as the imagination can well desire, and if related in strict accuracy would read like a wild romance. What their future is to be remains in the region of conjecture. The old Kimberley is rapidly passing away and a new Kimberley taking its place. It has ceased to be a camp and has become a town in the real sense of the word. The galvanized iron structures are giving away to substantial and pretentious buildings; some of the residences are luxurious and palatial. With the change in the outward aspect of the field has come also a change in the people themselves. It is now felt that the time has passed when men could come here and make a fortune in a few years and then go away. The road to wealth must now be as elsewhere a slow one to travel and the same qualities to secure it are required as in other parts of this sublunary sphere.

This is the commencement of the African summer and the heat by day is oppressive. The nights are cool. Much fever prevails, but there are few fatal cases.

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For further information, Application Blanks for Membership, By-Laws, etc., Address
P. O. Box 3277. 170 Broadway, New York.

The regular monthly meeting of the Executive Committee was held at the Alliance office on the 16th inst. There were present Vice-Presidents Henry Hayes and David Untermeyer, J. B. Bowden, Chairman, and Messrs. Alford, White, Kroeber, Lewis, and Geo. H. Hodenpyl, Secretary.

The following were admitted to membership: Rupp & Andrews, 22 Court street, Watertown, N. Y.; Ranger & Thompson, 79 Main street, Brattleboro, Vt.; Charles E. Hodsdon, 444 Central avenue, Dover, N. H.; Tapken & Miller, 59 Church street, New Brunswick, N. J.; Frank Mauser & Co., Broad street, North Attleboro, Mass.; Nelson A. Soggs, 162 Court street, Binghamton, N. Y.; Ansteth & Reinsch, 194 Main street, Buffalo, N. Y.; Voigt & Haas, 713 Seventh street, N. W., Washington, D. C.

Problems in the Detached Lever Escapement.

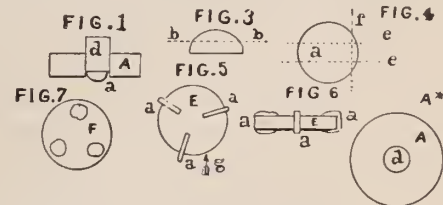
BY DETENT.



WE LEFT our machine for grinding pallet jewels nearly complete in September number of this journal. And before we commence again to consider the parts, I would beg to say to my readers that in building a machine of this kind, that the best thing a young mechanic can do, no matter whether it is a machine for grinding pallet stones or a device to accomplish anything else, the situation is about the same. First thoroughly master the principles involved, and the methods by which certain results are to be attained. These points once established in the mind we can readily see how these results are

to be attained by several other methods. As, for instance, in the little machine we are considering there are certain conditions imposed upon us where we start. The first of these conditions is, we are to produce a pallet stone by grinding by an alternating motion instead of a rotary one, such as is usually employed. The second requirement is the machine must be able to grind either a flat or cylindrical surface with accuracy and dispatch. The third count in the problem is to supply the best appliances to do our work well and rapidly. All these requirements were met in the machine described at our last interview. What I want to impress on the reader's mind is, that it is not necessary to follow every detail, because in many instances there might be better ways to realize the same result. Now to resume our pallet stone grinder. In making pallet jewels after our machine is completely ready to grind, is to prepare and make ready the stock of which we are to fashion a pallet stone. Garnets are generally used for this purpose in American watches, and very large cap jewels will answer. These are taken and flattened so as to produce a piece of garnet thick enough to form the pallet. It is important the sides should be flat and parallel; to ensure to do this we make a little holder shaped in vertical section as shown at *A*, fig. 1. The cap jewels we are using are shaped as shown magnified at fig. 3. Now, what we want next is to grind off the convex side on the line *b*. To do this we take a piece of steel in the form of a disc $\frac{3}{8}$ of an inch in diameter and $\frac{1}{8}$ thick; in the center of this we drill a hole $\frac{1}{8}$ of an inch in diameter as shown at *a*, fig. 1. In this hole we tap a screw with a fine thread and fit a screw plug as shown at *d*. This screw plug is carefully fitted so as to have its axis at right angles to the face of the disc *A*, and the end of the plug *d* is filed and ground to correspond to the face of *A*. The screw *d* is now drawn back so as to leave a recess as shown at *a*, fig. 1. Into this recess is placed the cap jewel. It is a good plan to harden file hard both *A* and *d*. For flattening the cap jewel as shown in fig. 3, there is nothing equal to a diamond lap in a lathe, but as we are working without a lathe we will make a flat lap of a piece of thick sheet copper by forcing diamond dust into the face of the lap with a burnish. A copper lap 4 inches long and half an inch wide will answer. This is lain flat and the surface wet with water, and the disc *A* rubbed back and forth, holding it (*A*) with the thumb and finger until the steel surface of *A* comes flat with the lap. The distance to which the screw *d* is withdrawn, of course, determines the thickness of the garnet slip. Fine emery and water used on a copper or lead lap, as above directed, will soon flatten a cap jewel, but not one-tenth as quick as a diamond lap. One of the flat sides of the cap jewel is, of course, polished when we commence; to polish the other side we take a lead or copper lap with tripoli and water. If emery is used

for grinding, care must be taken to remove by washing, and bread crumb every particle of the emery from *A* and *b*. The same lap cannot be used to both grind and polish, no matter how carefully we try to clean them. Of course, where we are grinding the garnet slip for a pallet stone we must grind it to just the thickness before we attempt to polish it. We have now a slip of garnet polished on both sides and shaped as shown in fig. 4, and we wish to cut it away on the sides to the form indicated by the dotted lines *e e* and *f*. We take a piece of soft sheet steel of the thickness we desire the pallet stone to be in width, and cut in 3 or 4 incisions as shown at *a a a*, fig. 5; into these recesses are placed the slabs of garnet to grind the edges. At fig. 6 is shown an edge view of the disc *E*, seen in the direction of the arrow *g*, fig. 5. In making pallet stones it is better to make up half a dozen at a time, as they will all be needed in one's work at no distant day. I should have said, when describing the process of polishing the flat side of the garnet slab for a pallet stone, that plug *d* should be advanced a little to allow the stone to come freely to the polishing lap. In polishing, a single stone can be polished in the disc *A*, but it is better to place three on a perfectly flat disc of brass, as shown at fig. 7, and cement them fast with shellac. The disc *F* should be about $\frac{3}{4}$ of an inch in diameter and at least $\frac{1}{16}$ thick. If each little slab of garnet is ground properly and only a thin coat of shellac applied to *F*, the slabs can be pressed down while the shellac is soft, so the polished side will lay flat and perfectly parallel with the lower surface of the brass disc. When cementing in a jewel shellac mixed with $\frac{1}{8}$ of gum mrryh should be used and not shellac dissolved in alcohol. Also in cementing in the garnet slips or slabs in *E*, this same composition of shellac and gum myrrh should be used, first filling the slots in with the cement and then pressing in the stone while the cement is hot. A peculiar pair of tongues for holding such things will be described in our next inter-



view, and more said about cementing in place in such a manner as to have the stones secure. The slots in *E* should be deep enough so only the edge of the garnet slips will protrude sufficiently to grind off to the line *f*, fig. 4. In grinding the edges of the stones *a a a*, it is not necessary to carry the grinding to that extent that the disc *E* touches the lap, but enough to form a full clean edge to our pallet stones and not have them so they look too wide and clumsy. After both sides are ground down properly we clean the grit away by washing, and bread crumb and proceed to polish on a lead or copper lap with tripoli and water.

The New York City of the Future.



THE SUPREMACY of New York city as the great commercial metropolis of the country was long since an accomplished fact. Its continuous growth is something wonderful. We are wont to note the rapidity with which prosperous cities spring up in the West, but shut our eyes to the fact that the growth of New York city, immediately under our observation, in population, wealth, and industrial development is something almost phenomenal. It is but a few years since all that portion of the city enclosed in Central Park, and adjoining it on either side, was a goat pasture, where nothing but this industrious animal could live because of the rocky projections. A few squatters had taken possession of the bald rocks as foundations for their low hovels and it was not thought that

the region could ever be made available for anything. Now this region and for miles beyond is solidly built up with large and massive structures, dwellings and business houses, and a new population has settled there. But this section by no means represents the growth of the city in population. Brooklyn, Staten Island and numerous cities in New Jersey have had a like wonderful growth, and the population is made up of persons who do business in New York, coming and going to and from their residences daily. If the population that is dependent upon New York city for employment, living within a radius of thirty miles of the City Hall, could be credited to the city, the next census would give us a population of not less than three millions of persons.

But with this increase of population, has necessarily gone hand in hand an increase in the material prosperity of the city. It has to-day more persons employed in mechanical and industrial pursuits of a greater variety than any of the so-called manufacturing cities in the country. From the cars of the elevated road, one sees that the upper stories of most of the business blocks are devoted to an endless variety of manufacturing industries, where men, women and children may be seen at work regardless of what passes outside. Then upon both rivers are the shipping interests, extending constantly, and other great manufacturing establishments. Westchester County has been incorporated within the city limits, and it may be necessary to put a fence around the city to prevent it from spreading all over the State.

Regarding the future of New York, Mr. A. H. Green, formerly comptroller and park commissioner of New York, predicts that the town of Westchester, the whole of Kings County, Flushing, Newtown and Jamaica, in Queens County, and the whole of Staten Island will be absorbed in the corporation of New York, giving to the city an area of about 320 square miles, as compared with London with an area of 687 square miles. To effect this object, Mr. Green would remove all obstacles, open ways, build bridges, and make it cheap and convenient to live in New York. From the easternmost point of Staten Island to the northerly line of the city, being the southerly line of Yonkers, would be thirty-two miles. From the Battery to its extreme northerly line would be, say, eighteen miles, and from the Hudson river to the easterly line of Flushing would be about seven and a half miles. It cannot be kept too constantly in mind, says Mr. Green, that New York is, and is to be, the great manufacturing center of the American continent. Its domestic is probably three times its foreign commerce. No impediment should be placed in the way of conveniences for continuing the hold of New York on the great continental traffic which by all the rights of topographical advantages belongs to it. The Hudson should be bridged, of course avoiding needless obstructions to the waterway. The great continental railway lines must be afforded facilities in establishing their terminals there. Where capitalists are willing to embark their money to open new ways to the city, to bridging and tunneling the adjacent waters, they should be encouraged, not opposed by vexatious legislation. Within a radius of twenty-five miles from the Battery in Jersey there are more people to-day than in Brooklyn, more than in the whole State of Connecticut, and the day is not distant when the necessities of business and the convenience of administration will force a concentration of the various towns, cities and villages within the above radius into one great municipality, with immense advantages for the accommodation of domestic traffic and with excellent water facilities.

Apropos to the above Mr. Simon Stevens, a lawyer of some note in this city, is reported by the New York *Tribune* as saying: "It is a curious thing in the study of the world's history to see how the commercial center has shifted, from time to time, in a general course around the globe. You can go back to a time when Antwerp was the center of the world's commerce. Next Amsterdam held the threads of commercial venture. Then the center was shifted to Liverpool. Now it is London. Next it will be in New York. A careful study of the world's commerce at the present time gives sure

indications that the power and prestige of England in her commercial relations is beginning to be shaken, while the commercial empire is drifting across the Atlantic to the metropolis of the new world." And as indicating what the powerful money kings of Europe think, ex-United States Minister Noyes reports that Baron Rothschild said to him recently: "The financial prosperity of the United States is without a parallel in the history of the world. You are drawing from all the treasuries of the old world to fill your own."

Book Notice.

THE editor, Mr. Charles Gros fils, of Saint-Imier, Switzerland, has kindly placed this office under obligation for a copy of the *Almanach des Horlogers pour l'an 1889—quatrième année*, price 60 centimes. It is a pamphlet, bound in paper, 8vo., of 52 pages, printed and gotten up in neat style, and cannot fail to be of interest to the watchmakers capable of reading French, of this country. Its pages contain a number of excellent articles, of which we mention a few: The barrel and mainspring; the good and the cheap; how many hours a watch will run; the escapement; cleaning steeple clocks; the polishing of watch pieces, etc. The editor also offers 50 premiums, consisting of one striking clock, one fancy mantel clock, one pair of vases, etc., to the purchaser of a copy of the almanac. Two special premiums, consisting of a large regulator, of the value of 50 francs, and a cup of fruit, cut crystal, value 20 francs, are also offered to the vendor who shall sell at least 12 copies of the almanac, and remit the money. For a copy or terms, apply to Chas. Gros Fils, St.-Imier, Switzerland.



The following list of patents is compiled from the records of the United States Patent Office, and specially reported to THE JEWELERS' CIRCULAR.

Issue of September 25, 1888.

18,633—DESIGN for Setting for Jewelry. Harvey Huestis, Providence, R. I.

15,898—TRADE MARK for Metal Tableware. The Holmes & Edwards Silver Company, West Stratford, Conn. "The word 'Edwards.'"

389,905—Gear-Shaping Attachment for Watchmakers' Lathes. Edward Rivett, Boston, Mass.

389,917—Method of Ornamenting Watch Cases. John Baynes, Westchester, Assignor of one-fourth to Lockwood De Forest, Oyster Bay, N. Y.

389,931—Clock Key. Almeron M. Lane, Meriden, Conn.

390,024—Safety Device for Music Boxes. Gustave J. Jaccard, New York, N. Y.

390,161—Watch Movement Box. William A. Gill and Charles A. Morningstar, Columbus, Ohio; said Morningstar Assignor to said Gill.

Issue of October 2, 1888.

15,924—TRADE MARK for Watches. Non-Magnetic Watch Company of America, New York, N. Y. "The representation of a watch with the electrical discharge emitting radially therefrom."

390,209—Button. Frank B. Brooks, Los Angeles, Cal.

390,230—Apparatus for Synchronizing Clocks. Charles E.

Hoeffling, London, County of Middlesex, England. Patented in England, Oct. 8, 1886, No. 12,840.

390,260—Watchmakers' Tweezers. Philip Seewald, Hudson, Mich.

390,333—Winding Indicator for Timepieces. Abraham M. Bachrach, New York, N. Y.

390,457—Watchmakers' Tool. James Cook, Chattanooga, Tenn.

390,501—Repeating Watch. Charles H. Meylan, New York, N. Y.

390,620—Jewel Setting. Nathaniel L. Ripley, Newton, Assignor to the Ripley-Howland Manufacturing Company, Boston, Mass.

Issue of October 9, 1888.

18,675—DESIGN for Spoons, Forks, etc. Robert Henry Klingel, Bridgeport, Conn., Assignor to the Holmes & Edwards Silver Co., same place.

15,936—TRADE MARK for Spectacles or Eye-Glasses. Ottumwa Optical Co., Ottumwa, Ia. "The letters 'I C.'"

390,786—Alarm Clock. Almeron M. Lane, Meriden, Conn.

390,855—Button, Heinrich F. Hambruch, Hamburg, Germany, Assignor to Aug. F. Richter, same place.

390,933—Manufacture of Gold Pens. Edwin Wiley, Brooklyn, N. Y.

390,934—Machine for Cross Rolling the Nibs of Gold Pen Blanks. Edwin Wiley, Brooklyn, N. Y.

Issue of October 16, 1888.

18,687—DESIGN for Button, John Frick, New York, N. Y.

391,016—Method of Making Watch-case Pendants. William W. Bradley, Newport, Ky., Assignor to John C. Dueber, same place.

391,031—Method of Producing a Bright Printing with Gold, Silver or Platinum. Max F. L. Ehrlich and Carl T. Storck, Frankfurt-on-the-Main, Prussia, Germany.

391,036—Method of Printing Gold, Silver or Platinum Decorations on Ceramic Ware. Max Ehrlich and Carl Storck, Frankfurt-on-the-Main, Prussia, Germany.

391,057—Finger-Ring, or other Article of Jewelry. Harry Lehr, New York, N. Y., Assignor of one-half to Isadore Locks, same place.

391,101—Watch-Regulator. Howard W. Welles, Poughkeepsie, N. Y.

391,123—Walking-Cane—George H. Coursen, Baltimore, Md. A walking-cane with removable head and partly hollow stick into the hollow of which is fitted a bar and a box, the bar to hold cigarettes and the box matches.

391,183—Watch-Barrel—Henry Oehl, Cheshire, Conn., Assignor to the Cheshire Watch Co., same place.

391,230—Button. Shubael Cottle, New York, N. Y.

391,271—Clock. Albert Phelps, Ansonia, Conn.

391,317—Safety-Pin. Sophia A. Haish, DeKalb, Ill.

very hard, but it is to be hoped that, as the first of the year approaches, that the jobbers will be more inclined to settle back balances than they have been of late.

The recent failure of Drown, of Philadelphia, found two unsettled accounts in this city that were not prepared to honor it, viz, that of Chas. Downs & Co. to the amount of \$639, and Hearn & Braitsh of \$400.

The Burden Seamless Wire Co. are to occupy the first floor in the new brick building erected for the use of manufacturing jewelers on Summer street. They expect to be moved from their present location and all settled by the last of the month at the latest.

The gold and silver refinery of Mr. George M. Baker at No. 119 Mathewson street, was visited by fire recently, but the loss was for only about \$200, covered by insurance.

The regular quarterly meeting of the Manufacturing Jewelers' Board of Trade was held at room No. 9 in the Wilcox Building, No. 42 Weybossett street, on the 29th ultimo. At the meeting, besides the reports of the officers, the Secretary, Mr. Morton, submitted a report from a personal interview with members in relation to the "Express Rule" as adopted by the Board of Trade, April 30, 1888.

The Gorham Manufacturing Co. have several elegant and tasty designs in silver forks of the latest patterns in one of the leading houses in the city.

Thomas J. Pope & Co., of No. 102 Pearl street, New York City, placed a keeper in charge of the manufactory of A. J. Linton & Co. on Sept. 14, through their legal attorney, Lemuel Foster, Esq. Linton & Co. had given two mortgages on their tools and fixture, and the foreclosure of the second one for \$2,500 by Pope & Co. seems to have forced Mr. George W. Hubbard, of No. 98 Westminster street, to put the attachment on the property in the interests of his client, a Miss Sinimons, who held the first mortgage for \$4,000, who now holds the key to the whole situation, which is somewhat complicated, to say the least.

Mr. K. A. Richardson has removed to No. 174 Westminster street, Room 8, from No. 129 Eddy street.

Amongst the late arrivals at the Narragansett Hotel is noticed the name of Mr. J. Mitchell, of Kingston, Ontario, who has been in the city buying goods for the holiday trade.

Messrs. Chas. Sydney Smith and Horace Remington were elected honorary members of the Grand Lodge of Plumcd Knights on Friday evening last.

Mr. Thomas Pray has removed from No. 235 Westminster street to No. 127 Summer street.

Mr. D. L. Safford, of the Jewelers' Mercantile Agency of New York, was in town last week on business connected with the Agency.

Mr. Charles Downs has joined the membership list of the Union Club.

The name of Mr. Edwin Lowe is again mentioned in his ward in reference to aldermanic honors, and he will probably succeed himself.

"On Dit" that Mr. George L. Vose, of the firm of George L. Vose & Co., may run for the office of Councilman in his ward.

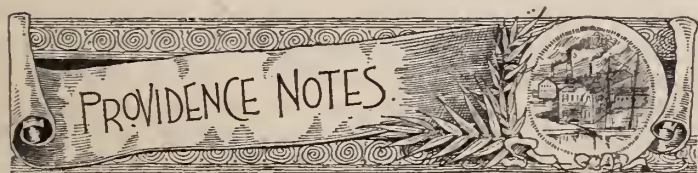
Mr. D. C. Landers, formerly in the employ of Fred I. Marcy & Co., severed his connection with that firm on Oct. 1, and has associated himself with a large wholesale drug house doing business in Chicago.

Hamilton & Hamilton, Jr., have removed to their new quarters in the "Enterprise Building," and are now all nicely settled and are much pleased with the change.

Mr. Fred H. Bryant, of the Jewelers' Mercantile Agency, visited the Attleboro Fair last month.

S. B. Champlin & Sons have notified the proper authorities of their intention to build a four story brick building on the site of their old estate.

Mr. R. A. Kipling returned from Paris per the steamer *City of*



[FROM OUR SPECIAL CORRESPONDENT.]

PROVIDENCE, Oct. 15, 1888.

There is little to be said in regard to the business during the past month, which at times has been fair, but generally of a very indifferent character. It is to be presumed that possibly after the election is past and the public settled again, that business may be better and of a more even tone than it has been for the past ten months. Failures during the month past have been very few and collections

New York on her last trip from the other side, and was disagreeably detained off the "Banks" for eighteen hours by the steamer's machinery being disabled during a very rough sea.

Mr. Charles Downs returned from abroad per the steamer *Celtic* of the White Star Line, on Friday, the 28th ultimo, after a two months' sojourn in France and Spain.

Messrs. William H. Luther and Ralph Hamilton, Jr., have added their names to the list of the Union Club.

Mr. George C. Booth, with Fowler Brothers, was in the city on Friday last on business connected with the firm, and met many old friends while here.

At the adjourned meeting of the "Grand Lodge of Plumed Knights," held in the rooms of the Republican State Central Committee in the Wilcox Building, on Friday evening last, Mr. Michael Fitzgerald, the well-known manufacturing jeweler, was elected as an honorary member.

The following named jewelers were noticed at Infantry Hall on Saturday evening last, attending the reception given by the Young Men's Republican Club to Congressman Thomas B. Reed, of Maine, who addressed the meeting. Michael Fitzgerald, E. Lowe, W. H. Luther, H. S. Dorchester, F. I. Marcy and J. M. Buffington.

The co-partnership announced in THE CIRCULAR some months since of Davis Bros., Bergmann & Co., has again been dissolved, as the following notice received will explain:

"SAN FRANCISCO, September 26, 1888.

The firm of Davis Bros., Bergmann & Co., having liquidated its entire indebtedness, and having been succeeded in business by Davis Bros., Bergmann & Co., a corporation, the partnership heretofore existing between the undersigned under the firm name of Davis Bros., Bergmann & Co., is hereby dissolved by mutual consent. The collection of outstanding accounts and liquidation of affairs of said partnership is hereby committed to Ansley G. Davis. Signed, Ansley G. Davis, Eugene G. Davis, Jacob Bergmann.

Mr. A. J. Cameron, of No. 10 Moulton street, has gone out of business.

Mr. John Austin, the refiner, has been re-elected President of the High street bank, the position of which he has held for several years.

The re-numbering of Summer street has made some changes in the present numbers. Doran & Co., Tillinghast, Mason & Co., Norton & Co., and Tucker, McLane & Co., formerly of No. 111, are now No. 143.

Mr. William H. Luther has filed a notice of his intention to erect a building on Adelaide avenue.

The case of Cottier & Son, of New York vs. Wm. L. McCausland, formerly of McCausland & Co., was called in the court of Common Pleas on Friday last before Judge Tillinghast, and judgment given in default for plaintiffs for \$177.77, amount and costs. The bill was contracted during the year 1886.

Howard & Son will remove their sterling department to the new "Enterprise" Building, on or about the first of November.

Mr. J. B. McAdams, of No. 24 Calendar street, has gone out of business.

Mr. Edgar L. Logee was elected a member of the Young Republican Club on Friday last.

William H. Luther & Son have sent their cheque for \$25 to the yellow fever fund of Jacksonville.

Kempf & Co. refiners, removed from No. 189 to 221 Eddy street, where they have more ample quarters for the prosecution of their business, which is constantly growing.

Mr. Wm. R. Duteinple is expected back within a few days from California, where he has been attending the Grand Encampment of Odd Fellows of the U. S.

Dodge & Carr are about to close out their business at No. 195 Eddy street, it is said.

Mr. F. A. Chase has removed from No. 25 Calendar street, to large and pleasant quarters in the new "Enterprise" Building, corner of Eddy and Fountain streets.

Mr. B. A. Ballou has been granted a patent right on an improved ear wire.

The creditors of J. M. Chandler & Co. held a meeting at the Manufacturing Jewelers' Board of Trade on Monday, and agreed to extend the time asked for by the firm.

The summer boats of the popular Providence Line, notably the *Massachusetts* and *Rhode Island*, will be withdrawn from the line on or about the 22d inst., and the winter travel will be diverted via Stonington, and the second steamboat train will again be put upon the old schedule time, viz., 7.50, and will be in charge of Conductor Isaac G. Niles.

Senator Charles Sydney Smith is spoken of in regard to the Mayoralty office of these plantations. The Senator would lend dignity to the office and fill the position with great ability.

Mr. Dexter C. Cheever succeeds E. C. Pease & Co. at No. 295 High street.

Mr. Charles Downs entertained some of his fellow passengers per the steamer *Celtic* at the Pomham Club the past week.

Mr. B. E. Daggett has recovered from his recent indisposition, and his many friends are pleased to note his presence amongst them once more.

FAIRFAX.



[FROM OUR SPECIAL CORRESPONDENT.]

CHICAGO, October 20, 1888.

By all odds the one topic just now interesting Chicagoans, aside from the presidential election, is the formation of a stock company, having over \$300,000 cash money in hand, with which to conduct a retail jewelry business.

From authentic sources your observer has collected all the information obtainable at this writing; it may be relied upon as being authoritative and exact, and can scarcely fail to interest not alone manufacturers and jobbers, but all those jewelers who have, perhaps, in the past wondered that, with one or two notable exceptions, New York, Philadelphia, Boston, San Francisco and even St. Louis, possessed what Chicago lacked—a retail jewelry establishment fitly representing her wealth and refinement.

Mr. Holbrook, of the Gorham Manufacturing Co., has purchased for those now identified in incorporating the new company, the well-known N. Matson stock, with the lease of their premises and the fixtures in them. The committee of creditors who have owned the plant since the close of the receivership in May, have yielded possession, and Mr. Edward Forman, who has managed the affairs with such signal success for the creditors, will continue in his position until the business can legally be taken possession of by the new company, probably sixty days, when he will become an important factor in the new regime. On January 1, Mr. H. A. Spaulding, now with Tiffany & Co.'s Paris house, will assume control, and Mr. Forman, who has been identified with the house for years, will be associated with him in the management; on that date the N. Matson sign will give place to one reading "H. A. Spaulding & Co.," incorporated, and the premises will be so renovated and remodelled that every passer-by will be impressed with the fact that capital and experience have joined hands with no uncertain purpose.

The articles of incorporation will be applied for within a day or

two and filed with the Secretary of State. They will contain, besides the names of Mr. Spaulding and others, the signature of L. J. Leiter, who subscribes \$100,000 of the capital, and whose wealth runs up into the millions.

It is the purpose of the new organization to in no way compete with department stores and china houses; no goods ordinarily kept by these trades will be handled. Watches, diamonds, jewelry, silverware and rich objects of art in the strict meaning of the words, will be the business of the company exclusively. Rich jewels will have most attention; manufacturing from special designs will be an important feature, and the originating of new ideas will be another marked characteristic of the establishment. It will be noticed that, differing from Tiffany's, of New York, Bailey, Banks & Biddle, of Philadelphia, and more especially from the Mermod-Jaccard Co., of St. Louis, the company succeeding N. Matson & Co. will not engage in anything foreign to the jewelry trade.

Mr. H. A. Spaulding is an old time Chicagoan; he was brought up in Aurora, a Chicago suburb, and went to Paris for the Messrs. Tiffany about seventeen years ago, after a few years' experience with the old house of Ball, Black & Co. Since then he has lived in Paris, and although still a comparatively young man, 45 perhaps, he is one of the best known experts in jewels and precious stones on either side of the Atlantic.

The committee who have managed the Matson settlement, Messrs. Alling and Snow, have accomplished something to be proud of, and the creditors are safe in counting on at least 80 per cent. of their claims. Mr. Alling is no prentice hand in these matters, and his colleague has acquitted himself so well that he need not be surprised if he is again called upon to act in this capacity.

Mr. Mermod, of the Mermod-Jaccard Jewelry Co., St. Louis, has been in the city during the past week, and was among the admirers of the new "Dresden pattern" in sterling silver flat ware just introduced by the Gorham Co.; samples of "The Dresden" are now shown in the Chicago warerooms, but six weeks is the earliest delivery promised. From its appearance, it will prove more difficult of imitation in plate than less delicate and intricate patterns.

Other buyers recently visiting this market: Stanley & Camp Co., of Milwaukee (Mr. Camp); E. J. Boone, of E. J. Boone & Co., Ashland, Wis.; Mr. Hoffman, of Quincy, Ills.; H. C. Graffe, Fort Wayne, Ind.; W. T. Plumb, Spring Valley, Ills.; J. A. Pratt, Oneida, Ills.; A. R. Zimmermann, La Porte, Ind.; P. E. Peterson, Rushford, Minn.

Somewhat earlier in the month the following out-of-town jewelers were noticed here: F. M. Riley, Jefferson, Ia.; Caldwell & McGregor, Pontiac, Ills.; Jacob Ramser, Rock Island, Ills.; H. L. Chase, Cedar Falls, Ia.; E. J. Ingersoll, Carbondale, Ills.; John Luckenbach, Green Bay, Wis.; L. Tuerke, Butte, Mon.; W. C. Swem, Hubbard, Ia.; Ben. Martin, Logansport, Ind.; John Estenstein, Batavia, Ills.; C. Overly, Rice Lake, Wis.; Otto Curtis, Decatur, Ills.; C. E. Axt, Odell, Ills.; A. H. Cathcart, Marshall, Mich.; R. S. Patterson, Port Huron, Mich.; H. S. Bisbee, Ludington, Mich.; Alfred Burnham, Sparland, Ills.; G. A. Woodford, Menominee, Mich.; G. H. Rolling, Bellevue, Ia.; C. D. Gardner, Manistee, Mich.; W. T. Sparks, Lodi, Wis.; A. Jacobs, Quincy, Ill.

The Chicago Jewelers' Association has reduced its membership fee to \$150; formerly \$300. The reduction has attracted many new members.

Robbins, Appleton & Co., the agents for the American (Waltham) Watch Co., who were visited by the observer yesterday, state that sixty or seventy per cent. of recent orders are unfilled through pressure of business. While this report is, of course, an exceptionally favorable one, it augurs well for business in the West and the time keeping punctuality of Americans in general. The further fact that the western demand for the Waltham watch has doubled in two years, evidences an increasing popularity as wonderful as it is deserved. Do all the readers of THE CIRCULAR know that the Waltham Watch Co. employ 2,600 people?

The Illinois Watch Co. is turning out two hundred ladies' watch movements every day. The relief society, composed of the employees of this company, now numbers eight hundred.

The Aurora Watch Company includes amongst its employees a remarkably efficient drum corps. Taken all in all, the watch companies of this State are making quite a noise in the world.

Jewelers are proverbially contented and prosperous; an occasional exception but proves the rule. Joseph Steffek has sought another world in the unknown beyond, taking cyanide of potassium to quicken the journey. He leaves a jewelry store at 739 South Halsted street.

There is always and forever a wish for novelty and change in the American mind. There is no other metal showing more varied usefulness and ornamental capabilities than silver. Silver plate affords to the great mass of people articles at once beautiful, useful and moderate in cost. These three facts were forcibly impressed upon the mind of the observer as he entered the show rooms of the Western Silver Plate Co. at 54 Madison street. They were too busy to say more than "Good morning, and good day."

Another busy man is Mr. G. A. Harmount, who has three very big irons in the fire at his large new premises on Wabash avenue. He is the western agent for the New Haven Clock Co., the Middletown Plate Co. and the Wm. Rogers Mfg. Co., and as none of these interests conflict, Mr. Harmount is making money for himself and all concerned. A wagon load of catalogues was just being expressed to his customers, and if those who fail to receive a package from him by Nov. 1 will say they noticed what he was doing in THE CIRCULAR, they will receive prepaid by express illustrated books from all three of these representative houses, which will prove of every day value to every jeweler. The New Haven Clock Co's catalogue, for example, contains illustrations of hundreds of clocks of every known shape, style and material. The address is 315-321 Wabash avenue, Chicago.

One of the most popular and busy of Chicago's wholesale jewelry establishments is that of H. F. Hahn & Co. Their specialty is diamonds and precious stones, loose and mounted, and extreme novelties in jewelry settings. When your observer first knew Mr. Hahn, some ten or twelve years since, his main stock in trade was energy and conscientiousness; since then he has added to his possessions, year by year, until now his large establishment on Franklin street is filled with rich jewelry bought for cash; he is President of the Jewelers' Association. A case of Lemaire opera glasses in exquisite casings, which was just being opened, had come direct from Paris in bond to H. F. Hahn & Co.

C. H. Knights & Co., at 125 State street, are another house emphasizing Chicago's commercial prosperity. Mr. Knights, not content with nearby trade alone, reaches out as far south as Texas. Like any new country Texas contains not a few men who would like to buy all the jewelry on earth and never give up a dollar in payment, but Mr. Knights has found no special difficulty respecting these far away credits, and reports collections quite up to his calculations and the trade satisfactory.

In the optical line, in which most jewelers are interested, the most conspicuous success is that made by the Geneva Optical Co., at 51 Washington street. Since July 15, when the Geneva Co. opened the Chicago branch of their New York State factory, their trade has exceeded all expectations. "Everything in the optical line" defines their stock, which includes opera glasses and all goods sold by opticians. Mr. Smith, who is the president of the Illinois company, holds the same office in the New York company, but each is a distinct corporation.

Summing up the situation.—Chicago jewelers say through their mouth-piece, THE CIRCULAR, that while politics, just before a presidential election, does not exert a beneficial influence upon traffic, business amongst the western jewelry trade is fulfilling early expectations and equaling the record made in 1885. Those now visiting this

market come to buy; they buy neither more nor less than their trade and capital justify; they all evidently intend to pay promptly and to avoid a surplus of stock. Such signs of the times indicate enduring prosperity void of panics.

A letter from Fort Smith, Ark., corrects rumors concerning Mr. L. G. Day, a jeweler of that city, which were occasioned by the recent transfer of his stock to Benj. Allen & Co., of this city. Among his towns-people, those who know him best, Mr. Day appears to be popular and respected; when a man stands well in the estimation of his neighbors he usually merits the esteem of the world in general.

William B. Miller, who was arraigned at the Armory Police Court yesterday morning, charged with obtaining goods under false pretences, is a rogue. He is well dressed and oily-tongued. A few days ago Miller entered the jewelry store of N. Matson & Co., corner of Monroe and State streets. Walking up to a gray-haired clerk, he exclaimed with an arrogant air: "I want to look at a clock. See too it, sir, that it is one of the finest you have in stock, sir." Miller was dressed elegantly. He represented himself as E. E. Holland, of 418 West Washington street. The clerk looked at the directory and saw that E. E. Holland was a reputable merchant. Several time-pieces were exhibited, and finally Miller selected an elegant French clock, valued at \$83. He ordered it to be sent to Holland's residence as quickly as possible. It was delivered half an hour afterward. As luck would have it, neither Mr. nor Mrs. Holland was at home. The servant who answered the bell, presuming that Mrs. Holland had purchased the clock, receipted for it. Miller was standing on the corner watching the proceeding. When the boy left he rushed up to the front door, rang the bell, and when the girl appeared exclaimed: "Excuse me, but a clock has been left here by mistake." He described the article so minutely that the servant without hesitation handed him the time-piece. Miller straightway took it to Lipman's pawn-shop and obtained \$20.

THE CIRCULAR'S OBSERVER.



[FROM OUR SPECIAL CORRESPONDENT.]

ATTLEBORO, Oct. 20, 1888.

At a recent political meeting in Bates' Opera House one of the speakers, with an evident desire to speak of something which would have a special interest to his hearers, the most of whom were, of course, jewelers, spoke of the great copper trusts and the products of the copper mines which, in the form of "brass" entered so largely into the industries of this section. The gentleman was, of course, right. Brass is a leading factor in the manufacture of the Attleboro jewelry, but he evidently labored under the impression that most of the jewelry manufactured here was made of brass. In this he was wrong. While one or two of the shops do absolutely nothing but brass work, it is the exception rather than the rule. Every year sees more gold goods made here and the competition which has grown so rapidly during the past few years has compelled the use of better material until it is now possible to find some excellent plated stock where only a few years ago there was not a particle of gold used and, too, this can be bought for nearly as cheap as the poorer quality of a few years ago.

The business in this town has had a falling off during the past two weeks, although it is fairly good at present. The excitement and uncertainty incident to a presidential election has failed to seriously injure the trade and nearly all the salesmen who are now or have

been in the west are finding a fairly good market for their goods. Some of the manufacturers seemed very much afraid of showing their new patterns at the recent fair, preferring to exhibit old styles. This seems very foolish from the fact that if any of the jewelers here desire to steal the styles of their competitors they can get them easy enough.

Mr. S. O. Bigney, of the firm of Marsh & Bigney, has recently purchased the elegant residence of Mr. Wm. Blackinton, the well-known manufacturer of chains, and after having it thoroughly renovated has moved into it. Mr. Bigney is an example of what the jewelry business has been in this town when rightly managed. It is only a comparatively few years since he was working at the bench, with no particular prospects of advancement beyond that of any of his fellow workmen, but through energy and perseverance, combined with a faculty of securing good workmen, he has made himself rich and his recent purchase is probably the finest residence in the town of Attleboro.

Another of our popular young jewelry manufacturers is Mr. H. A. Clark, of the firm of Horton, Angell & Co. This firm manufacture large quantities of buttons, and, having good salesmen on the road, have done a first-class business this season. Mr. Clark has been in the firm only a short time, but they would have hard work to supply his place if it should become vacant. One of the new firms which have started in this town within a few months is that of the Bates Button Co. It is managed by Mr. Frank Bates and Mr. J. G. Hutchinson. The former is the youngest son of Mr. J. M. Bates, the well-known manufacturer of watch cases, and by far the wealthiest man in town, while the latter is no doubt well known to theatrical people through his former connection with the Providence Opera House and his present position as manager of Bates' Opera House of this place. This firm bought out the plant of the Costello Button Co. and have been quite fortunate in securing taking designs and styles which have found a ready sale.

ATTLEBORO FALLS.

One of the best known firms in this vicinity is that of R. F. Simons & Co. The senior member of this firm is a man generally liked by every one. He thoroughly enjoys holding the reins over a fast horse and owns several speedy animals, the best one being "Del Monte," who has figured in two or three big races this past season and has a record of 2:21½. J. L. Sweet, his partner, resides in Attleboro, where he is looked upon as one of the leading citizens. He is a man very positive in his opinions and of late has taken a very active part in the affairs of the town. The firm have enjoyed a good degree of prosperity in their business and at present have plenty of orders on their books.

NORTH ATTLEBORO.

This town is even more of a jewelry center than its neighbor four miles away. It was here that many years ago the pioneers in this great industry first started the manufacture of those goods which have become known throughout the country. Little did that firm think when they commenced in their modest way that they were laying the corner stone to an industry which, in a few short years, would be employing thousands of men and women and bringing into the town hundreds of thousands of dollars a year. It is the jewelers who pay the big taxes and consequently the jewelers take a deep interest in the affairs and prosperity of the town. Just now some of the leaders are interesting themselves in the success of a railroad through the town which, if carried out, will give them direct communication with New York and Boston. Mr. T. I. Smith, a prominent jeweler, is one of the leaders in this movement and he with Mr. J. D. Lincoln, of Lincoln, Bacon & Co., of Plainville, who is also interested, have the reputation of carrying through most anything they undertake. There is no doubt but what the town would be greatly benefitted by such a road. Mr. T. G. Sandland, of Sandland, Capron & Co., is being talked of as the next representative to the General Court from this

town. Mr. Sandland has been there one year, and if he becomes a candidate will have an excellent chance to be elected.

I learn that the following firms in the two towns were losers by the late failure of J. M. Chandler & Co., of Cleveland, Ohio, but to what extent I am unable to say. Undoubtedly some of them have been hit pretty hard, but it is not likely that any of them will be seriously effected. Short, Nerney & Co., of Attleboro, Demarest & Brady, Young & Stern, O. M. Draper, H. D. Merritt & Co., E. E. Fisher & Co., G. W. Cheever & Co., Sandland, Capron & Co., and H. H. Curtis & Co., of North Attleboro, Barden, Blake & Co. and Wade, Davis & Co., of Plainville.

MENDON.

Extended Use of Some of the Rarer Minerals.



THE VALUES of some of the rarer minerals used as gems are so enormous that the idea of counting them by the ton would seem very absurd, yet the production of diamonds in South Africa last year amounted to more than a ton in weight, or, to be exact, 3,596,036 carats, valued at about \$21,300,000. In other words, 2,497 pounds Troy, valued at \$8,530 per pound, or more than \$17,000,000 per net ton. Yet even these prices are less than those for some rubies of fine quality, which are, however, not found "by the ton," as diamonds are.

These values would reward a good deal of prospecting, but unfortunately they depend on the very difficulty in finding the stones, so that they don't pay the prospector, who cannot wait long enough for the reward that might come after a long continued search.

Many of what are now comparatively common and inexpensive minerals were a few years ago extremely rare, and since they have not the qualities which would always make the diamond popular and valuable, they entered into use and found a ready market only when diligent search had found them in such quantities as to reduce their cost.

There are many useful and not very rare minerals, some of which are worth prices that, if applied to the ton of ore, would appear immense, and which are yet so little known to prospectors and miners that they might walk over them or throw them in the waste dumps without ever suspecting their value.

Among the so-called rare minerals which are almost unknown to prospectors, but which are attaining considerable importance, are those containing the earth's zirconia, thoria, glucina and several other substances that are now in good demand. At the last meeting of the New York Microscopical Society, Mr. GEORGE F. KUNZ, the able mineralogist of Messrs. TIFFANY & Co., of this city, exhibited sand from Brindletown, Burke Co., N. C., containing monazite, which is a phosphate of cerium, lanthanum, didymium and thoria, of which it contains from 0 to 17 per cent., and also exhibited monazite sand from Caravelhas, Brazil. He stated that the demand for these minerals had greatly increased of late, owing to the rare earths, zirconia, thoria, glucina, etc., which they contain, and which are now used for the mantle or hood of the new incandescent gas burner invented by Dr. CARL AUER, called the "Welsbach" light.

This increased consumption has led to a search by the collectors and dealers in England, Germany, France, Russia, Norway, and Brazil, and more especially in the United States, and so thorough has the search been that the prices of minerals which were considered rare a short time ago are now quoted at one-tenth to one-hundredth of former figures.

The minerals containing these earths are: Lanthanite, sipylite, tysonite, uranotorite, orangite, thorite, cleveite, beryl, ytrotantalite, alvite, erdmannite, cerite, monazite, xenotime, fergusonite, æschynite, allanite, zircon, eudialyte, euxenite, samarskite, gadolinite, and bode-nite. Of these beryl, cerite, monazite, xenotime, allanite, and zircon

have been obtained in large quantities. Sipylite, orangite, and thoria are especially sought for.

Monazite has been found at the following localities: at Villeneuve, Ottawa County, Canada, a crystal of 14½ pounds; Alexander Co. N. C., at Millholland's mill; Amelia County, Va., in 20-pound crystals; Norwich, Conn.; Ural Mountains, Tavetch. (var. turnerite) Mount Sorel (var. turnerite), Binnenthal, Switzerland, Southern Ural, River Sanarka, Arendal, Norway, but at all these localities the occurrence is of mineralogical interest only. In Burk, Polk and McDowell Counties, North Carolina; at Glad Mine, Georgia, and at Caravelhas Bahia, Brazil, it can be obtained in the form of sand in commercial quantities.

In the North Carolina gold gravels of Rutherford, Polk, Alexander, Burke, McDowell and Mecklenberg Counties, monazite is found in considerable quantities in small brown or greenish or yellowish brown monoclinic crystals, associated with chromite, garnet, zircon, anatase, corundum, menacanite, xenotime, fergusonite, epidote, columbite, samarskite and other materials. With these associations have been found several of the North Carolina diamonds, and from these localities will be furnished tons of monazite within the next twelve months.

The Brazilian monazite is found at Caravelhas, Bahia, where its existence was made known about 8 years ago by Dr. ORVILLE A. DERBY, geologist of Brazil. It occurs in large quantities as a beach sand almost free from other minerals, as if concentrated. As it occurs on the coast, it can easily be shipped directly to any point desired, and over six tons have already been sent to the United States.

The Merideth Freeman estate on Green River, Henderson County, North Carolina, is one of the best zircon localities, and for twenty-five years was in the hands of Gen. T. L. CLINGMAN, who mined 1,000 pounds in 1869, believing firmly in the incandescent properties of zircon. Unfortunately for him, when the time for utilizing this mineral had at last arrived, Gen. CLINGMAN had forfeited his leases.

At Anderson, in Anderson County, S. C., zircons are found in immense quantities loose in the soil under similar conditions to those in North Carolina. They evidently come from a decomposed feldspathic rock. The crystals are generally remarkable for their perfection, weighing occasionally seven ounces. The recent demand has also brought to light the existence of enormous quantities of zircon in the Ural Mountains and in Norway. The zircons in North Carolina and Georgia are never of gem value.

Although in Canada, in Renfrew and adjoining counties, immense crystals have been found, single crystals being up to 15 pounds each, yet they are so isolated that it would be impossible to obtain them in any quantity.

As already stated, the use of the Welsbach incandescent light has created a new demand for these minerals, and with rare prudence the parties interested quietly gathered a stock before the demand was generally known. It is said that there have now been accumulated more than 25 tons of zircon, 10 tons of monazite, 6 tons of cerite, and thousands of pounds of samarskite and other minerals. As a consequence zircon is now offered at less than 10 cents a pound, monazite at 25 cents, and samarskite at 50 cents, and many of the uncommon minerals at equally low rates. It is said that the zirconia in one ton of zircon would, if used alone, make half a million Welsbach burners, but several other minerals are mixed with it to produce varied and beautiful effects of color in the light.

CORAL FISHERIES OF ITALY.—The coral fisheries of Italy have largely decreased for the last two years, as is shown by the numerous complaints and statistics on the subject. The whims of fashion are blamed, while an over-production is also largely contributing to the low state of the coral commerce. The business of coral fishing on

the coast of Italy occupied, in 1886, 266 barks, of 931 tonnage, and 2,366 men. Only few barks were engaged in fishing in 1887, and a still smaller number went, during the first few months of 1888, to the Canal of Messina, where the favored fishing grounds are situated.



[FROM OUR SPECIAL CORRESPONDENT.]

LONDON, October 8, 1888.

I have visited many places of interest in Britain and on the continent since I last wrote to you, but my movements have been rapid and my notes have necessarily been general rather than particular. Speaking, then, generally, I have noticed that on the few bright days we have been favored with, ladies at our seaside resorts have displayed more jewelry than usual. The season so far has been marked by a display of richer toilets than I, at least, have noticed in summer time. Gold jewelry and silver filigree ornaments are much worn. Perhaps the tight-fitting costumes are calculated to bring such ornaments into greater prominence, but I do not remember to have noticed so many and such rich ornaments at our various watering places as I did during the past season. The Brighton season has only commenced, so that I may have to modify or to emphasize this opinion in my next. I have not noticed so many novelties in our shop windows as I have done in former seasons, but the displays generally are very good. If there are not so many positively new articles, there are better shows than we have had. The skill and taste everywhere bestowed on the windows of our leading jewelers are deserving of notice. Particularly attractive as a window dressing are the seasonable ornaments made by Booth Bros., of Birmingham, and referred to, I believe, in my last. I have just seen a nice collection of their "sea-bean" jewelry, fruit brooches and claw brooches. Their "specimen" brooches and lockets are decidedly novel. They consist of very little bits of seaweed and pieces of coral, miniature shells, etc., etc., tastefully arranged and protected by glass, and variously but appropriately mounted. It is really as wonderful as it is interesting to observe how effective these otherwise unattractive objects become when they are judiciously arrayed and skilfully mounted.

A summer novelty in the way of scarf pins is a bird's nest of oxidized silver, arranged very naturally, and containing three small pearls representing eggs.

In connection with the present agitation for a more extended technical education, the Society of Arts offer prizes to art workmen for the season 1888-1889, in goldsmiths' and silversmiths' work. These prizes—four in number—are for excellence in art workmanship in gold and silver work. All articles for competition must be sent to the society's house before April 23, 1889. Full particulars of the conditions under which the prizes are offered can be obtained by any one who applies for them to the Secretary, Society of Arts, John street Adelphi, W. C. It is expected that this competition will do much to cultivate a higher artistic taste in the production of articles of personal decoration.

The Birmingham Jewelers' and Silversmiths' Association have made arrangements for the opening of art classes for students between the ages of twelve years and twenty. Students to be taught by separate masters on definite lines preparatory to the study and practice of artistic designs, suited to the trades in which the students are engaged. It is proposed that the education of the association students shall be free, the committee finding one-half the cost, and the employer in each case providing the remainder. The plan will

be put in operation this month if forty students will avail themselves of it. If this can only be actively carried out, the position of the trade and the artistic character of its production must be greatly improved.

There are complaints in Paris that there is not at present a great demand for the better class of jewelry. Great things are expected from the Universal Exhibition to be held next year. The works for this are steadily advancing, the Eiffel Tower being already very conspicuous in front of the proposed building.

There is some little stir just now respecting an imitation jewel recently patented in Paris. It has been named a polychrome. A series of imitation stones of different colors, but all bright, are set in juxtaposition, with a strass over them all causing them to sparkle brilliantly. I did not see it under conditions very favorable for effect, but I should think that with the accessories of light and distance obtainable always in a place of public entertainment, and very frequently in a private house, the result would be satisfactory.

Flowers delicately made up of appropriate gems, cunningly arranged into brooches, are in vogue in Paris. Some of the gems are so arranged as to resemble as closely as possible the natural colors of the original. This has been successfully done in the case of a pansy brooch I have just seen. Two of the petals are in light gold and the two others are in silver. All are accurately formed and adjusted, and the metals are so marked that they present that soft, velvet like face which is the true charm of the natural pansy.

I find in Paris, also, there is a growing desire for increased facilities for technical education in connection with our trades. The Paris School of Horology, which was founded seven or eight years ago in a very humble way, has met with much success. A very commodious building has been allotted in the Rue Marion to the purposes of the institute. Upwards of one hundred pupils may now receive every requisite, practical as well as theoretical instruction.

I was much interested and certainly greatly instructed by a hurried visit I was able to pay to the Exhibition of German Art Industry at Munich. From a brief inspection of the works of art there exhibited by the goldsmiths of the small town of Hanan-on-the-Maine, I have learnt more of the capabilities of the South German manufacturers than I ever learnt before. I shall not be content until I have personally visited that industrial center. Though circumstances may compel me to defer my visit, I will take the earliest possible opportunity of making it. The collection I have referred to is a very important feature of the exhibition, and it is rendered more interesting to the ordinary visitor by the fact that the articles comprising it are, for the greater part, such as are worn and used daily and of the present fashion. The Hanan workmen are thoroughly artistic in all they do, and the amount of patient labor and trained skill they bring to their aid will at once be seen in the perfection of every detail of their work. Their productions of lockets, pendants, bracelets, necklaces and other articles of every day jewelry are simply beautiful. The ways in which they work up rubies, diamonds, sapphires, pearls, etc., into flowers, butterflies, animal's heads and insects are simply wonderful. I was struck with the very novel utility of a beautiful brooch, made entirely of branches studded with diamonds. The flowers of which the branches are composed may be taken off and used as a brooch or as a side spray, while the remainder is used as a hair pin. There were also some interesting and unique specimens of cameo cutting. These are really artistic, and are, I should think, quite equal to the productions of any Paris house—but of this I am, perhaps, scarcely qualified to speak. Cameo cutting is claiming considerable attention in London just now. I may say more about it in my next.

VIGILANT.

LONDON, Oct. 9, 1888.

The hopes I have expressed in my recent letters as to an improvement in the jewelry trade have been fully realized. A decided change has taken place and there is now much more vitality than has been seen for very many months. Indeed, the energy manifested in some of

the older houses recalls memories of times past. In every branch of industry the trade of the country has improved—capitalists are encouraged to invest their money again and the jewelry trade is sharing in the general restoration of confidence. The ring manufacturers are particularly active, more especially makers of cheap gem rings. The improvement in this one class of rings is very marked. Diamond hoop rings are still in demand, but there is not much sale for signet rings.

There is a continued variety in the production of brooches. One of the most novel, but at the same time one of the least appropriate designs for a brooch is a monkey—the body studded with brilliants, and the head, hands and feet of oxidized silver. The demand for silver goods is fast declining, but there is a good sale for silver jewelry finished in gold.

Mr. F. W. Hayward, of Norwich and Mr. F. Mills, of Bracondale, are jointly developing their new departure in jewelry. They are fitting various articles, lockets, brooches, scarf pins, etc., with a main-spring, and train of wheels for imparting circular, oscillating, or other kinds of motion to these articles. The spring is wound by a key and is made to run for twenty-four hours if required. We are sure to see a development of this idea. Its novelty will create a demand for articles fitted with it, and I may tell you more about it hereafter.

VIGILANT.

Practical Hints on Optics for Skilled Opticians.

[EDITED BY C. A. BUCKLIN, A. M., M. D., NEW YORK.]



WE WILL now consider that form of asthenopia caused by differences in the eyes (anisometropia and antimetropia). The accommodation strain is often felt when the range of the faculty for each eye singly is normal, and it then appears to depend upon the inequality of demand in the two. The nerve stimulus which produces accommodation is believed to be transmitted from the center in an equal degree to each eye, and no inequality of accommodation is thought to be possible, except from peripheral failure in one of them. Supposing the eyes, although unlike in their refraction, to be in all essential respects healthy and to be directed to the same object, it is assumed that only one of them will receive a perfectly sharp image or will be correctly accommodated for the object; the other being incorrectly accommodated, and therefore receiving an image which is less sharp, but which may still be sufficient to maintain binocular vision. It would seem, at first sight, as if such an arrangement must lead to the constant employment of the eye which is most easily adjusted, and to a practical neglect of the dim image received by the other, such as obtains an ordinary squint. If this were so there would be no apparent cause for asthenopia, unless the accommodation of the eye most used was itself unduly strained. But, as a matter of fact, we find asthenopia in a certain proportion of such cases, and it may possibly be brought about by the relations which exist between the two eyes. There is much reason to believe that, in ordinary binocular seeing, although both eyes are concerned, they are not at any given moment both concerned equally; but that one of them is active and the other more or less passive or complementary, the two exchanging their functions in this respect from time to time, and each becoming, so to speak, anode and cathode by turns. Assuming this relationship between them to exist, so that each eye takes up the more active seeing alternately with its fellow, we shall have a demand for a corresponding variation of accommodation whenever the change of function takes place; and I am disposed to think that this is the true explanation of the occasional asthenopia of unequal eyes. Let it be supposed that the right eye has a myopia of one dioptric, and the left a hypermetropia of the same degree. There

would then be an increase or a relaxation of accommodation equal to two dioptries whenever the transference of the more active seeing occurred, and the familiar experiment of looking at a star with one eye only until it disappears from view, leads to the supposition that such a transference must occur every few minutes. If this be so, the alternate tension and relaxation of the accommodation, for the same degree of convergence, may very well become a source of visual strain.

It would appear at first sight that the correction of anisometropia or of antimetropia would be simple, and would require only the application to each eye of the lens necessary for its own defect. Sometimes this plan will answer well, but sometimes it is impracticable. Every lens placed before an eye alters the size of the retinal image, and hence, where two unlike lenses are employed, the effect is to give the two eyes images of unequal magnitude, which cannot always be fused into one. We shall find some persons who fuse the unequal images readily and others who cannot fuse them at all. My impression is that the cases in which fusion is resisted are usually those in which binocular vision was previously sacrificed to the defect, and that in these we seldom meet with asthenopia as a consequence of it. The only possible rule of practice is to test the power of fusion with unequal glasses, and, if it exists, to let such glasses be worn continuously. When fusion cannot be accomplished, the requirements of the better eye of the two must chiefly be taken into account, and the patient must be encouraged to use it singly. At the same time the worse eye must not be neglected, but, being furnished with a lens suitable to its wants, it also should be used singly at regular intervals in order to keep its retina duly exercised and receptive. By reading with it systematically, even for a few minutes at a time, three or four times a day, its vision may often be improved; and I have sometimes seen the increased attention thus paid to its impressions result in the restoration of binocular vision, so that each eye could eventually be separately corrected, and yet the two be employed in unison.

When the original examination of the patient affords no reason to suspect strain of accommodation as a cause of the asthenopia, attention must next be directed to the convergence, and here we enter upon ground which is no longer secure. Von Graefe was the first to point out that in a certain number of cases asthenopia is dependent upon inability to maintain the necessary convergence instead of upon inability to maintain the necessary accommodation, and he invented the phrase "insufficiency of the internal recti," to fulfil the double purpose of describing the condition and of conveying his hypothesis upon its nature. He appears to have meant by insufficiency a state of weakness which bears no resemblance to paralysis or to paresis, and which is attended by no paralytic symptoms, but which renders the affected muscles unable to discharge continuously their most important natural functions. In the majority of the cases, the internal recti, when tried by any test which would be applicable to other muscles, are found to be in full possession of their powers. The range of adduction of each eye, in correspondence with the adduction of its fellow, may be complete, and may cover a much greater extent of movement than any which can possibly be called for in convergence for binocular vision. The binocular near point may be as close to the eye as in the normal state, and the power of overcoming prisms by adduction may leave nothing to be desired; but, notwithstanding, when the maintenance of a given convergence is difficult or impossible, we are asked to believe that "muscular insufficiency" is the ordinary cause of the trouble. We are even told by some writers that this mysterious affection is one of "very common occurrence."

A man of commanding and fertile intellect, like Von Graefe, can hardly fail at times to suggest hypotheses which will not bear the test of examination, and I have little doubt that if his life had been spared he would long ago have repudiated this one. Many of his pupils, however, some perhaps from a laudable veneration for the memory of their master, others from a less laudable conviction that

the chief use of a great philosopher is to save other people from the labor of thinking, have continued to respect his words as if they were necessarily the exponents of verity, and hence the notion of insufficiency of the interni has taken deep root in the literature of ophthalmology. It has done so the more effectually because Von Graefe devised two tests of insufficiency, according to which this condition may be found in almost every case of myopia in which it is looked for.

His successors, when they have met with apparent muscular asthenopia, have applied Von Graefe's tests, and the results which he declared characteristic of insufficiency have been produced. The diagnosis has then been considered to be complete, and the real value of the tests themselves, until quite recently, has remained unquestioned.

Von Graefe's first test for insufficiency was to direct the patient to look steadily at some object in the median line, at a distance of six or eight inches from the eyes. A screen or the hand of the surgeon was then interposed in such a manner as to conceal the object from one eye. If the eye so excluded from vision retained its direction unchanged the interni were supposed to be normal; but if the covered eye deviated outwards the interni were supposed to be insufficient. In order to ascertain the degree of the insufficiency, another and more delicate test was next to be applied.

In the more delicate test the object of vision is a small black dot, bisected by a vertical line. A card thus marked is fixed in the median line, at a distance of eight or ten inches from the eyes, and the patient is directed to look at it steadily. A prism of ten or twelve degrees, with its base either upwards or downwards, is then placed before one eye, and, as the power of the superior or inferior rectus to overcome double vision is very limited, this prism necessarily produces a vertical diplopia. The patient will therefore see two dots, one above the other. If the original convergence for the object is accurately maintained, the duplication of the vertical line will only cause it to appear elongated, and the two dots will be seen, one above the other, on the same line. If, on the contrary, the convergence is not maintained, the patient will see two lines with a dot upon each; and when the diplopia is a consequence of relative divergence of the optic axes the double images will be crossed, and the extent of the divergence will determine the distance between them.

A second prism with its base inwards will produce approximation or fusion of the images, and the prism which brings them back to the same vertical line is assumed to be the measure of the insufficiency, as it certainly is of the relative divergence. In other words, the assumed test of sufficiency of the interni is that they shall be able to maintain an unchanged convergence when one eye is excluded from vision of a near object to which both eyes were originally directed, and that they shall also maintain an unchanged convergence notwithstanding an artificially produced vertical diplopia. When the requirements of these tests are not fulfilled, the existence of insufficiency has been taken for granted; and it has also been taught that the best method of treatment is tenotomy of one or both of the external recti. It has been assumed that the insufficiency is relative; that is, in any given case the strength of the interni did not preponderate over that of the externi in a sufficient degree to allow of the maintenance convergence, and that division of the externi by weakening them would redress the balance of power. In this assumption another is manifestly involved, namely, that both the external and internal recti muscles live in a state of continual tension, and that the externi, even when not receiving any motive impulse, present an impediment to the free performance of ocular convergence.

The reasoning of the author is ingenious. Muscular asthenopia is less frequent than is generally supposed. It however exists as the result of a failure of any ocular muscle to perform its proper function. I believe it always has its origin in a pre-existing paresis or disease of the muscle, some of these diseased conditions never having been described. The tenotomy of a muscle which opposes a weakened or

diseased muscle is, in many instances, of great advantage to the weakened muscle. I do believe the convergence, divergence or vertical movement of the eyes must be demonstrated to be faulty, and so faulty that special gymnastic exercise and tonics will not restore the weakened muscle before it is rational to resort to tenotomy of the opposing muscle. I agree that muscular troubles of late are a little overdone. But the author must have made a few blunders himself on the other side if he has failed to meet any of those cases suffering from asthenopia, caused by a weak muscle, which has been relieved by tenotomy of the opposing muscle.

School of Optics.—Letters from several of the students at work report that the financial improvement which came as a result of attending the school of optics gave them courage to marry. Geo. F. Applegate, of Trenton, N. J. makes a similar report this month. F. L. Hall, of Gouverneur, N. Y., reports that he had a good optical trade in that place which he lost entirely as soon as his competitor attended the school of optics. Not wishing to repeat the experience in his Carthage store, he has qualified himself to hold his optical trade. He further states that he believes that every dealer having an optical trade will lose it sooner or later in the same way unless he has a sufficiently competent person in charge of it to protect it. Applications will be received from this time for January 10 and later. No further classes will be formed before that date.



[FROM OUR SPECIAL CORRESPONDENT.]

ST. LOUIS.

The recent changes in the location of the leading jewelry houses of St. Louis causes considerable comment in the trade. The change to their new location of the old established house of Mermod and Jaccard Jewelry Co. is one which cannot help but prove satisfactory, and the many advantages of this new store will be fully recognized as the holiday season approaches. With a frontage on Broadway of 100 feet and on Locust street of 127 feet they secure a front show window space of 210 feet for the display of their different lines. This store inside is handsomely arranged with cases of mahogany and walnut and a marble floor, and is lighted by electricity throughout, and has without doubt the largest stock outside of the city of New York. This house carries complete line of all goods that any first-class establishment would carry.

This business was established in 1864 and merged into a stock company in 1883, with A. S. Mermod, president; D. C. Jaccard, vice-president; C. F. Mathey, treasurer; Goodman King, secretary. The business is divided into some 15 departments, each have its head, and all being experienced men in the business.

The general management is in charge of Mr. A. S. Mermod and Mr. Goodman King. They have representatives in New York, Paris, Vienna, and a watch factory at St. Croix, and a jewelry and silverware factory above their store. They make semi-annual trips to Europe and are among the first to display all foreign novelties in this market. About one-half of the basement of this large store is handsomely arranged for the display of pottery of all makes, both foreign and home productions, bronzes, brass goods and bric-à-brac. To the rear of this room are the engine rooms for running the elevators, also to run circular tables in the different show windows facing on the street. These tables are suitably covered and revolve,

and on these are displayed the novelties of the different departments.

The first floor is devoted to the sale of diamonds, which is a department and a private office by itself. Then comes the watch department and jewelry, silver and plated ware, optical goods, fans and fancy goods, and all being separate departments. Cut glass, pottery, music boxes, brass and Mexican onyx goods, and an immense stationery department. In the rear of this store they have a good-sized room, furnished as a parlor, with mantle, grate and every facility for showing their goods, such as are used to decorate the home. This idea is of great assistance to the purchaser, as they can then tell how it would look at home. A piece of handsome pottery or a handsome clock shows far better and sells much quicker on a handsome mantle than on a show case or low table.

To the rear of the store are offices for the transaction of business of the buyers of the different departments and the order department. It does one good to visit this establishment and see their manner of doing business. They seek business from 8 A. M. to 6 P. M., and it is business all the time. They are heavy advertisers, and I believe the largest in that way of any retail jewelry house in the country, and, I think, are the first to issue an illustrated catalogue to the people. They are just now sending out a handsomely arranged catalogue, good size, beautifully illustrated and described to their customers, offering goods suitable for presents and for service, at prices from 50 cents to as expensive as one would wish to go. The fifth floor of this building is devoted to their factory, where they manufacture all kinds of special designs in diamond mountings, and badges. Then there is a department for watch repairing, one for engraving, also one for steel and copper-plate engraving and printing. Their factory is about 40x127 feet in size and they employ over 100 men. They sell a watch with their own name on, for a fine watch in both ladies' and gents' sizes, and also carry a full line of American watches.

E. Jaccard Jewelry Co. was founded in 1829 by Mr. Eugene Jaccard, and at Mr. Jaccard's death it was incorporated into a stock company about the year 1880. They were formerly at the corner of 5th and Olive streets, but have now moved into their new store corner 6th and Olive, which is about 50x75 feet in size. Mr. E. J. Cuendet is president of this corporation and also manager. Their store is finished in black walnut, and will be, when the decorations are completed, a very handsome store. It is lighted by electricity, has a marble floor and all the improvements that a first-class jewelry store requires. He makes a handsome display of diamonds and jewelry, silver and plated ware. Has a stationery, also optical department. Mr. Cuendet is the European buyer of this establishment, and is abroad almost every year. They have a factory connected with this store, which manufactures most of their diamond mountings and special orders.

They sell a Swiss watch with their own name on for a fine watch. Mr. Cuendet is very much pleased with the business outlook of this new locality.

Merrick, Walsh & Phelps still occupy their handsome store corner of 4th street and Washington avenue, which they moved into several years ago, and report a very satisfactory business.

J. Bolland & Son. This house was established in 1848 by Mr. J. Bolland, and is one of the oldest jewelry houses in the city. Mr. Bolland associated his son, Mr. J. F. Bolland, with him several years ago. They keep a fine line of goods, have an old established trade and are doing a very nice business. Mr. J. F. Bolland has full charge of the business, and they sell the Lange watch for their fine watch.

L. Bauman Jewelry Co. was established in 1844, and incorporated 1882, with Aug. Kurtzeborn, president; Myer Bauman, Treasurer; Sol. Bauman, Secretary. They have a large store at 312 N. Broadway, and do both a wholesale and retail business, and are undoubtedly the largest jobbers in St. Louis. They employ three travelers, who travel all through the west and northwest.

HARD SOLDER.



[FROM OUR SPECIAL CORRESPONDENT.]

CINCINNATI, Oct. 19, 1888.

The feature of this month in this city has been the semi-annual convention of the Ohio Retail Jewelers' Association. This convention was called to order by President Welf, on October 8th, in parlor A of the Burnet House. C. J. Olin, the secretary, called the roll, whereupon the following named applicants for membership were received as a body into the association: Otto J. Pfeiffer, of Oxford; T. B. Satterthwait, of Lima; Benj. Fuller, J. H. Lentz, Jas. Morgan, Wm. Owen, Thos. Lovel, Chas. Espberger, H. H. Mithofer, H. A. Dodt, I. Heugge, Jos. Daller, Lewis Hoenig, Chas. Esberger, John B. Bobe, Frank Herschede, B. Thielan and Henry Korf, of Cincinnati; E. R. Kent, of Cleveland; J. M. Washburn, of Celina; Jos. Sauer, of Newport; M. C. Motch, of Covington; G. Lohmers, Newport; F. Pepper, Covington; Jos. Horffersberger, of Middletown.

About the first question to be considered by the convention was the admission of a committee from the Jobbers' Association of the city and another from the Dueber Watch Case Co. The former bore an invitation to a banquet to be given in honor of the members on the evening of October 10, the latter an invitation to a ride on the river in Mr. Dueber's steam yacht, Olivette. Both invitations were accepted of course.

During the session a committee, consisting of Messrs. Welf, Olin and Bobe, was appointed to select a purchasing agent whose duty it shall be to purchase all the supplies for the members of the association. The purpose of this move is apparent, placing all the small dealers on a footing with the jobbers of course the plan is not indorsed by the latter.

Delegates to the United States Jewelers' Guild, to meet in Chicago during May, 1889, were chosen as follows: D. Furtwangler, of Washington Court House; R. L. Mershon, Zanesville; M. C. Motch, Covington, Ky.; Jno. B. Bobe, Cincinnati; L. F. E. Hummel, Cincinnati; Joseph Wolf, Cleveland; Chas. J. Olin, Piqua; Ed. Corriell, Portsmouth; S. W. Bruck, Hamilton; A. L. Miller, Malta; A. Thorna, Piqua, and C. W. Horn, Findlay.

One of the results of the meeting of the Olin Jewelers' Association here has been the formation of a Cincinnati branch. It now numbers about thirty members and Mr. Hummel, one of the prime movers in it, seems confident that they will be not less than fifty strong before the year closes. Monthly meetings will be held and the interests of each individual member closely watched.

The jewelers of the city, assisted by the delegates to the convention of the Ohio Jewelers' Association, celebrated Jewelers' Day at the Centennial on Monday, October 8th. All the stores of the city, wholesale and retail, and all jewel manufacturers were closed in honor of the occasion. The route to the Centennial lay through several of the thoroughfares of the city and it was taken by the jewelers in a body. Mr. James Morgan acted as grand marshal, assisted by a staff of twenty mounted men. A band headed the first division of the procession, followed by the employes of Duhme & Co. to the number of 200; Noterman & Jonas, 50 men; John Holland's employees to the number of 40. Employees of Fox Bros. & Co., Herman Keck Manufacturing Co., Clemens Hellebush, Wm. Owen & Co. and Louis Homan & Co. The second division was led by Clemens Hellebush, Jr., with a staff of ten. Veteran and disabled jewelers were in the procession, but they rode in carriages. At the Centennial the occasion was made especially entertaining with music from the well-known soloist Miss Amelia Hellebush, daughter of Mr. Clemens Hellebush, accompanied by Liberati's band.

The banquet given the Ohio Jewelers' Association by the Cincin-

nati Jobbers at the Burnet House on the night of Wednesday, October 10, was an unusually pleasant affair. Those present were: F. Piper, E. G. Lohmeyer, Alvin Thomas, H. H. Mithofer, M. E. Motch, Covington; J. B. Bobe, G. C. A. Greyer, A. L. Miller, J. F. Miller, J. F. Kramer, S. W. Brock, Hamilton; R. W. Barbour, C. H. Duhme, E. J. Morris, E. H. Simper, Isa Schroder, C. E. Weber, W. Owen, J. Morgan, A. G. Schwab, F. Hershede, D. Schroder, Louis Homan, Jos. Altschul, Joseph Becker, S. M. Peck, E. R. Kant, H. T. Kent, H. W. Frankenstein, Henry A. Dodt, Charles T. Geary, John G. Otting, H. F. Stagaman, E. Hirsch, H. C. Kachlein, Moses Schwab, E. Schott, J. J. Nurre, B. Thelen, Henry Rohs, Jos. Sayler, H. Welf, E. W. Blinn, Fred Schaeffer, J. M. Washburn, Louis F. Twachtman, J. Meyer, H. Strunk, F. Harnborn, Karl Zeller, W. J. Savage, C. A. Sanders, L. C. Eisenschmidt, J. Jonas, C. J. Olin, Louis E. Hummel, Herman Nippert, H. Lange, Henry Hahn, J. H. Lentz, W. Fink, Jonas Wise, R. A. Vanpel, F. E. Wittlig, J. Shroder, Clemens Hellebush, J. E. Beck, Jas. J. Davis, Jacob Hugger, Edward Coriell, T. T. Geoghegan, W. O. Amann, A. B. Clark, M. D. Kelley.

A. Herman, president of the Wholesale Association, presided at the banquet. At the table with him were the Ohio Association. President, Mr. Welf; His Honor Mayor Smith; W. S. F. Oskamp, of Washington Court House; Furtwangler, Clemens Hellebush and Judge Schroder.

Toasts were responded to as follows: The City of Cincinnati, Mayor Smith; Our Guests, Clemens Hellebush; Welcome, H. Welf, of Cleveland; Retail Jewelry Trade, Chas. H. Duhme.

After that there were addresses by W. S. P. Oskamp, A. G. Schwab, Judge Shroder, John B. Bobe, of this city; C. J. Olin, Piqua, and W. J. Savage, Columbus, Ohio.

The memory of Herman Duhme was toasted. The guests drank to the toast in silence and while standing.

Denver Letter.

DENVER, COLO., Oct. 15, 1888.

Trade matters are in that state peculiar to election periods, and an improvement will probably not be felt until after the conundrum of "Who is next?" shall have been solved. The city is being visited by Mr. Silverstone, of Julius King Optical Co.; Mr. Ayer, of Kent & Stanley, the chain manufacturers of Providence, and many more. The latest new move or preparation for one is that of Henry Bohm, the leading diamond dealer, who is to occupy the elegant new store in the Jacobson block, just being completed, at corner of Sixteenth and Arapahoe streets. As it is acknowledged to be the finest location in Denver, and as Mr. Bohm has acquired a first-class reputation as a connoisseur in precious stones and fine goods generally, a palatial establishment may be looked for. He will occupy the premises in season for the holiday trade, and will make a strong effort to outdo all his previous endeavors.

The veteran jeweler, A. B. Ingols, one of the earliest pioneers locating in Denver early in the sixties, still can be found at his Larimer street establishment, with an elegant stock of watches, chains and jewelry, and the reliability of his regulator is on a par with his dealings, which is surely a compliment. In the early days, long before the railroads had penetrated the "Great American Desert" the Indians captured the stage coach, with all the express matter, including a large invoice of watches and jewelry, valued at over \$2,000—en route to Mr. Ingols—and which were never recovered. Nothing daunted, the order was immediately duplicated, and this time with better success. I believe the goods were from Wheeler, Parsons & Hayes.

Another pusher, with every indication of success, is Mr. John D. Allen, a watchmaker of acknowledged skill, and with a large circle of

acquaintances. His quarters at 1124 16th street are always busy, Prof. Ford, the optician, occupying a portion of the store. The professor will hereafter have four more eyes to fit, Mrs. F. having recently presented him with a pair of "undressed kids."

Colorado Springs, seventy-five miles south of Denver, and directly under the shadow of Pike's Peak, is a gem of a city, and getting to be quite a prominent railroad center. The Colorado Midland and Rock Island running east and west, and D. & R. G., and Atchison, Topeka & Santa Fe, north and south.

The leading business is done by A. G. Earle, formerly of New York, and son of the late proprietor of Earle's Hotel, the well-known hostelry. His stock is of the finest and would compare favorably with any of our large eastern cities. Frank W. Lott also does a flourishing business.

L. G. Goodspeed, for seventeen years on the road in Illinois, Indiana and Iowa, handling materials, etc., has succeeded L. C. Davis in the retail business, and with his knowledge of the business can't fail to acquire a profitable trade.

Robertson & Co. confine themselves to watch work principally, and always have from twelve to twenty watches ahead on their well filled rack. Mr. J. Robertson is also a graduate of the Chicago Ophthalmic College, and a skilled optician. The population is to a great extent made up of people of wealth and leisure, boasting several millionaires. Many invalids make it their home, and some miraculous cures of lung diseases have been caused solely by the dry climate and abundant sunshine, combined with 7,000 feet elevation. Colorado City, two miles west, is the seat of the Colorado Midland repair shops, and is a hustling, lively little place, especially after dark—when, I regret to say, I don't think the prohibition ticket would stand much show. On the principal street I counted thirty-five saloons inside a half mile. Railroad men also must have watches, and their wants are attended to by Mr. D. L. Marcher, who thus far has encountered no opposition, and reports a steady increase in his business. Three miles up the valley lies Manitou, the famous Saratoga of the West, with its sparkling springs and numerous summer hotels. Thousands of tourists visit this place yearly, the attractions being Pike's Peak, Garden of the Gods, Cheyenne Canon, and Helen Hunt's Grave on the mountain top, with numerous caves and the finest of mountain scenery. A large trade is done with the tourists, the principal jeweler being Mr. I. G. Heistand, a mineralogist of high renown, formerly of Philadelphia. His lapidary establishment is kept busy cutting the various specimens found in the vicinity.

The new Waterbury watch with second-hand and short wind is displayed in a window in this mountain-surrounded place, and the inhabitants also seem to keep pace with the times in most other respects. Before this issue of THE CIRCULAR reaches its many readers, the question of free wool and lead will in a measure have been settled. Let us trust for the best.

ROUGH DIAMOND.

Birmingham Letter.

BIRMINGHAM, October 10, 1888.

Our jewelers have not had such a good run of trade for several years as during the past month. Almost without exception we hear of people working several hours a day overtime, and workmen who are anything approaching reliable are not to be had; this has not been a sudden rush of trade, but has been growing in volume for several months, and this fact causes us to hope that it will remain with us for some time.

Bangle bracelets are again very fashionable, not in the old form of a number of wires, but principally as curbs, two circles of stiff curb being fastened together, the one gilt and the other white; again a sin-

gle row of stiff curb chain, the links alternately silver and gilt, sometimes the gilt one being richly chased.

With the coming of winter we are getting enquiries for paste diamond goods again, and fortunately in the very finest qualities as well as the common rubbish which has sold so much of late years. I saw a large stock of best paste goods a few days since, most of the pastes were small in size and in silver settings, backed with a 12 karat red gold mount to imitate the 18 karat gold settings of diamond goods.

The two articles which took my attention was a large star containing nearly 100 stones, which would be worn either as a brooch, pendant or a hair ornament, and would be retailed at about forty dollars, and a brooch, horseshoe shape, of two rows of paste, the outer row consisted of 30 pastes and the inner one of the same quantity a size smaller. This would be retailed at ten dollars.

By gaslight, when worn, these could not be told from real diamonds, unless examined closely, and then the covering over the backs of the pastes, to prevent the foil being injured, would at once proclaim them to be pastes.

There is also a great rage for old Roman and Greek coins; these, of course, not being procurable in sufficient quantities, have led to imitations being made which are now worn as pendants on gents' chains, both with only a ring soldered on top and also in a mount with glass back to front; again, small ones are made into scarf pins and earrings, and we even have them stamped in metal and made up as brooches, three and four being soldered together, and also a cluster of coins made into a clasp for cloak or waist belt, these metal ones being oxydized to imitate old silver.

We often have letters in our newspapers asking what has become of the jubilee coins. If the writers were in the secrets of the jewelry trade they would be able to tell. When these coins were about to be issued, our jewelers at once saw that people would seek to keep them in commemoration of the event, and several patents were taken out for holders for the coins, so that the holders could be bought from the jeweler and the coin be put in by the owner. These have principally been in the form for brooches to take either several small coins or one large one. The best mount out is one which is not a patent but simply a wire framework made to exactly fit the coin, and on the end of each wire is a small rounded knob of such a form that when the coin is pressed against it, it springs asunder and the coin drops behind the knobs, and these latter being square at the back, make it impossible for the coin to come out unless force is used with the intention of getting it out.

In addition to these, large quantities of coin are being mounted as pendants for gents' Alberts. I saw at a manufacturer's, a few days since, a bag of jubilee shillings lifted out of the safe, it was just as much as a man could carry, and I was informed that when these coins were first issued, three bags full like these were obtained from the bank in the expectation of this run upon them.

SOLITAIRE.

The New York Jewelers' Association.

President, H. B. DOMINICK,
(Dominick & Haff.)

Vice-President, A. K. SLOAN,
(Carter, Sloan & Co.)

Treasurer, H. E. IDE,
(H. C. Hardy & Co.)

Secretary, A. E. PRITCHARD.

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JAMES E. SPENCER,
GEO. W. SHIEBLER,

The New York Jewelers' Association is fast coming to the front as one of the most valuable of our trade organizations. The new officers seem to have infused a life into it heretofore unknown.

The character of its information has always been of a kind not

obtainable through any other medium, and with the recent improvement in its detail working, its method of getting reports and the rapid manner of distributing the information, the Association has been placed among the indispensable institutions of our city, and there is no doubt the time is not far distant when the Association's membership list will be so complete as to largely control the credits of the trade.

The advantages to members are great; among them a commercial reference and a collection department, either of which has a value to a merchant, which makes the sum deposited for yearly dues a paying investment.



[THE CIRCULAR is not responsible for the opinions or statements of contributors, but is willing to accord space to all who desire to write on subjects of interest to the jewelry trade. All communications must be accompanied by a responsible name as a guarantee of good faith. No attention will be paid to anonymous letters. Correspondence solicited.]

BACK VOLUMES FOR SALE.

To the Editor of the *Jewelers' Circular*:

I have THE CIRCULAR since 1876 to 1887 inclusive, substantially bound at a cost of \$1.75 per volume, all in most perfect order. Have you any call for them? The cost to me is \$41.25, for which I would part with them as I have no son.

CHAS. PETERSEN.

Honesdale, Pa.

UNSOLICITED TESTIMONIALS.

To the Editor of the *Jewelers' Circular*:

Enclosed find draft for \$2.00 for one year's subscription to journal. It is a necessity with me, as I consider THE CIRCULAR the best trade journal published. I have a good many back numbers and would like to have them bound. What can you furnish me backs for and stamp?

CHAS. BECK.

Franklin, Ind., September 26, 1888.

Enclosed is two dollars for a year's subscription, which is a small ratio in consideration of the value THE CIRCULAR is to me.

FRANK SOUTHWICK.

Warren Centre, Pa., September 22, 1888.

To the Editor of *The Jewelers' Circular*:

Of course I do not want THE CIRCULAR stopped; it has become an old and valued friend. Enclose find \$2.00 for renewal.

R. G. ELDRIDGE.

Hartford, Ct., September 20, 1888.

To the Editor of the *Jewelers' Circular*:

Find enclosed \$2.00, being amount of my subscription to THE JEWELERS' CIRCULAR for one year to October, 1889. I like your paper very much and would not be without it for twice the yearly price.

W. A. CRISP.

Minnedosa, September 27, 1888.

To the Editor of the *Jewelers' Circular*.

Enclosed please find postal note for \$2.00 for renewal of my sub-

scription to THE CIRCULAR 1888-89. It is a welcome monthly visitor and is, if possible, getting better all the time.

J. S. NISWANDER.

Gilroy, Cal., Oct. 5, 1888.

To the Editor of the Jewelers' Circular:

Enclosed please find postal order for \$2.00, one year's subscription to THE CIRCULAR from Aug. 1888. THE CIRCULAR improves every year, keeping well abreast of the times. Those monograms are very useful to me. Wishing you further success,

H. J. WOODSIDE.

Portage la Prairie, Man., Oct. 8, 1888.

A GOOD CHANCE TO BUY BACK NUMBERS.

To the Editor of the Jewelers' Circular:

I have been subscriber for your invaluable paper for about twelve years, ever since it was in plain sheet, and have the numbers nearly all complete. I have read and collected all I want from them and am going out of the business and thought I might be able to sell them. Would they be of any use to you, or do you know any one who would like to have numbers complete? Anyone who wished to compile a book on horology, could not get better notes, etc., etc.

A. E. BYWATER.

Trenton, Ontario, Can., Oct. 13, 1888.

To the Editor of the Jewelers' Circular:

I enclose you subscription to THE CIRCULAR for another year. I look for it anxiously every month.

Yours Respectfully,

JOS. E. WELLS, JR.

Macon, Ga., Sept. 3d, 1888.

To the Editor of the Jewelers' Circular:

Enclosed find blank filled out and also postal note for \$2.00 for another year. THE CIRCULAR is by far the best magazine for watch-makers and jewelers that ever came before my view.

H. H. TRUCKENBROD.

Mendota, Ill., Oct. 17, 1888.

KIND WORDS FROM ABROAD.

To the Editor of the Jewelers' Circular:

A patron of THE CIRCULAR in England, in the course of a business letter says: "I am delighted with your journal. It is the best business journal I have seen. Every department is first-class. There is not a trade journal here that has any illustrations to compare with yours. Your advertisements are tastefully displayed and excel in that most essential feature, attractiveness. The spirited enterprise of your proprietors in supplying such very superior paper contributes greatly to the excellence of the journal and the faultless manner in which the whole is edited indicates the greatest skill and the most assiduous care. My daily life is spent among journals, manufactories and stores, so that I am not sorry to spend my evenings as often as possible, free from contact with trade and trade subjects. It happens, however, that your journal is mostly delivered by our evening delivery about 8 p. m. and that evening I always devote to a perusal of as much of your interesting matter as the evening will admit of. I sincerely wish you all the success you deserve. I could not wish you anything better.

WANTS HIS WATCH FIXED.

To the Editor of the Jewelers' Circular:

The following is a verbatim copy of a letter recently received by a watch repairer:

Dear sir I have heard of you beeing a Watch Repair and I have one I want to send to you for to fix and I Want to know What You

Wile Charg for Puting in a Waining Chain in my Watch a Whale the Kogs is Brok off and Please let me know What you Will Charg to Put it in and it is Pure Silver and I want you to let me know and I Will send it to you if you Will fix it for me and it is a find Silver Watch 1 the Whinding Chain Whale is needing New Cogs on it and it may need sum outhor Work in it and I Want you to tell me What you Will fix it for if you will Put that W. heel in it and C hristell on it Please let me no if you Pelease and I Will Send it to You. My Po Soff is

Blankville, N. C., Dash Country, Oct. 13, 1888.

FINE DIALS.

To the Editor of the Jewelers' Circular:

Where could I have a dial made, first quality, 3½ in. diameter. I want it for a model for a time-piece I have invented which will run twelve months with one winding, and strikes quarter-hours on separate bells. Has calendar and noiseless escapement—something new.

R. F. GRESHAM.

Greenville, Ga., Oct. 20, 1888.

[Mr. E. D. Wetherbee, of Waltham, Mass., can probably make what you want.—ED.]

Obituary.

BENJAMIN B. CHAMBERLAIN.

Benjamin B. Chamberlain was born at Keeseville, New York, March 15th, 1831. He was the son of the Rev. Parmalee Chamberlain, a Methodist clergyman formerly well known in New York, and Governor Chamberlain and President Chamberlain of Bowdoin College sprang from the same family tree. He was graduated from the Irving Institute and also attended the Peekskill Military Academy, where, with General Adam Badeau, he carried off the honors for scholarship and general excellence. After leaving school he was apprenticed to Mr. Benj J. Lossing, then an engraver in New York, and subsequently went to Cincinnati to embark in business for himself. He met with success there, but about 1865 he returned to New York, where the field for such work was broader.

At the time of Morgan's Raid he served on the Home Guard for one year but was retired on account of a slight deafness.

While in Cincinnati he turned his attention to collecting, his first hobby being medallions, and after his return to New York he took up the study of minerals, making a specialty of collecting those of New York and vicinity. For this work he had exceptional facilities as the Fourth avenue improvement was then in progress and blasting was going on in many parts of the city now built over. Such was his enthusiasm that he often neglected his business to watch the operations of the blasters. His researches extended into the suburbs and his collection contained many fine specimens from the Delaware, Lackawana & Western and West Shore tunnels, and from the mineral localities of Staten Island and Westchester County.

He leaves one collection at the Nyack Library. His foreign collection he sold recently to Mr. Edward Pearson for the new school at Cloudland, New Jersey. The principal work of his life was his collection of New York island minerals, now deposited in the American Museum of Natural History. His contributions to local mineralogy have been published from time to time in the Transactions of the New York Academy of Sciences, and during the past few months his paper on the Mineralogy of New York Island, a pamphlet of 25 pages, appeared in the same source and has been reprinted in separate form. He was a fellow and curator of the New York Academy of Sciences, Treasurer and one of the founders of the New York Mineralogical Club, the Agassiz Association of Nyack, the West End Literary and Scientific Society. He was a man of considerable artistic talent, had exhibited pictures at the Academy of Design, and

made a large number of paintings both in water and oil, of interesting suburban scenery. As a sketcher he was quick and accurate, and with his keen sense of humor, furnished no end of amusement to his friends. He leaves albums filled with sketches made during his service at the time of Morgan's Raid, and on his many jaunts in search of specimens.

He was very companionable, full of pleasing anecdotes and cheerful under all circumstances, even when suffering pain. Among the scientific, literary, and æsthetic circles of New York he had hosts of friends.

He had been ailing for some years but his death, which occurred at the home of his brother, Mr. E. H. Cole, at Nyack, on October 13th, was very sudden. At noon he had a severe hemorrhage and at half-past two died, almost without a struggle. The cause of his death is believed to have been rheumatism of the heart.

CORTLANDT W. STARR.

Cortlandt W. Starr, of the old established firm of Black, Starr & Frost, died on October 1st, at his home in New Rochelle, N. Y. Mr. Starr was born in New London, Conn., February 17th, 1833, and when a child his family moved to Sag Harbor, Long Island. Here he spent his life as a boy, and later was sent to the Trinity Chapel School in New York City, whence he graduated in 1849 with high honors. After leaving school he entered the employ of the firm of Ball, Black & Co., as an errand boy. This firm was one of the leading retail jewelry houses in the country, and young Starr showed himself an apt clerk. He gradually arose in the ranks of the employees of the firm, and for twenty-five years served them faithfully. During that time he made many friends and later in life became a leader in social circles. In 1874 the firm of Ball, Black & Co. was succeeded by the present firm of Black, Starr & Frost, whose establishment on Fifth avenue is one of the finest in the city.

During the early part of the late war Mr. Starr formed a private military company, and later he joined the Thirty-seventh Regiment. Within six months he was promoted and in 1863, he took active part in the war as orderly sergeant. In April, 1864, he was given the commission of second-lieutenant. After the war he joined the Seventy-first Regiment, and at the time of his death was a veteran of that organization.

Mr. Starr was not only prominent in military circles, but was widely known in business and social circles. He was very popular owing to his active participation in events of a social or military character. He leaves a widow and three daughters.

L. H. KELLER.

Ludwig Hugo Keller, senior partner in the well known tool and material house of L. H. Keller & Co., 64 Nassau street, New York, died of a complication of diseases at his residence, 1057 Lexington avenue, on the morning of the 23d of October.

Mr. Keller was born in the town of Ueberlingen, duchy of Baden, in 1832, and after serving a short apprenticeship at the mercantile business in his native place, in 1852 he emigrated to America. G. A. Huguenin, who subsequently became his brother-in-law, was then engaged in the material business at the present stand, 64 Nassau street, and Mr. Keller entered into his employ, traveling for him some years in the west. About 1863 he started in on his own account, making his headquarters at Rochester, his wife's home. Finally, in 1873, Mr. Huguenin turned the business over to Mr. Keller and permanently retired, returning to Baden Baden, where he had landed interests and where he still lives. Mr. Keller then abandoned the road altogether. In 1876 F. J. Boesse and the late Edward Hunziker were admitted into partnership.

Mr. Keller had not been in good health for about two years, and appeared to be suffering from a general break down. On the 9th of June last he went to Europe in the hope of receiving benefit from the change as well as to gratify a long cherished wish to see his

birth place, but returned on October 9th so completely broken down that he was unable to visit his office thereafter. Among the trade of the western states, where he traveled for so many years, he was widely and favorably known. In disposition he was genial and unassuming, and in character above reproach. His characteristics as a business man were industry and honesty. The funeral took place at the church of St. Vincent Ferrer, on Lexington avenue, on Friday, and was largely attended. He leaves a wife and six children.

THE London *Horological Journal* in its last issue says:

"Next year is to see a fierce battle between rival methods of Swiss watch manufacture at the Paris Exhibition. On the one hand, there is the old hand system in which economy of production is sought by subdivision and improved tools. Though hand work is spoken of, it must not, of course, be supposed that no machinery is used, but the broad principle is improving the watchmaker instead of abolishing him. The machine system is a radical revolution in which skilled labor is employed on the tools rather than on the pieces of watch work. While in America the machine system has no rival because cheap skilled labor is not to be had, it is otherwise in Switzerland. There many of the old firms have made remarkable advances of late years in the way of cheapening production by the freer use of gauges and the better direction of labor. A curious feature in the struggle is that nearly all the machine factories are among the German-speaking population, while with the old watchmakers the language is almost universally French. This further division adds, if possible, to the bitterness of the rivalry."

The Scape Pinion in Swiss Watches.



THIS PINION is generally in a bad condition. It will frequently be found to be cut to such an extent as to render accurate timing impossible, and to cause wonder that the watch goes at all. The fact that these pinions are cut so quickly is due to many causes. A prime reason for their being so fragile is their smallness. Again, the absence of shoulder to the pivots permits the oil to run into the leaves, there to collect dust, thus forming a cutting mixture, which becomes imbedded in the soft brass of the fourth-wheel teeth and speedily destroys the shape of the leaves. In addition to this, the pinions themselves are, as a rule, very soft and of a poor shape and polish. In order to avoid as far as possible the evils resulting from inferior pinions, care should be taken to buy none but the very best, and to reject all such as are unequal, out of shape, or incorrectly sized.

In working in a new pinion when the old one is at hand no trouble will be experienced as to height, and when the old pinion is removed from the wheel all the measurements can be taken from it by the millimeter gauge. This gauge is much lighter in its action than the douzieme gauge and altogether more suitable, having finer and cleaner divisions. About two-tenths of a millimeter are equal to one douzieme. The jaws of this tool are frequently not fitted closely, and on account of their hardness can only be corrected by grinding. A piece of flat brass, similar to a barrel cover, is fixed in an arbor and adjusted to run true in flat; a little emery and oil or stone dust is applied on each side of it. The turns having been put in the vise sideways, so that the gauge can hang freely, the jaws should be allowed to close on the lap. A few revolutions will grind both jaws true and perfectly parallel. After this operation it is not unlikely that the pointer will pass beyond the index; if so, the end of the pointer must be gripped in the vise with a piece of card inserted between it and the vise to prevent marking and pulled until it indicates correctly.

When the old pinion is not at hand it will be well to proceed in the following manner: Having put in the cylinder, a brass collet, similar to a pivoting ferrule, should be roughed out, its thickness being a little in excess of the height you imagine the scape pinion head to be. This is to be placed in the scape-wheel sink with the

wheel on top of it. The wheel can now be compared with the cylinder passage, and its correct height ascertained. The thickness of the collet must be gradually reduced until the wheel is at a correct height. Having removed the wheel and cylinder, it will be well to measure over the collet and lower jewel hole with the millimeter gauge, previously removing the end piece. The thickness of the jewel hole may be next measured, and being deducted from the previous measurement, will give the distances from the lower pivot shoulder to the seat of the wheel. The height of the pinion-head will, of course, be less than this, but in what degree will depend on the position of the fourth wheel. The leaves should come just through the wheel teeth, and any excess is bad, for the reason above mentioned that oil is attracted from the holes. After the scape-cock is screwed on, the distance over both jewel-holes should be measured; care must be taken not to bend down the cock in this process. If the thickness of both jewel-holes is deducted, the distance from shoulder to shoulder, or height, will be ascertained. The measurements should be set down on paper as taken to avoid mistake.

The work of running in the pinion may be accomplished in the following manner. The pinion, if obtained from the material dealer, will generally be much longer than necessary, the leaves being thrice as long as the pinion is to be when completed. The first thing to ascertain is that the leaves run true; then, as one end of the pinion is always polished, that end should be kept for the face and touched up with bell-metal and diamantine.

Next, the leaves should be turned down until the wheel will just pass on a short distance and allow itself to be gradually let down to its proper position. It should be finished with oil-stone dust and a steel polisher. The distance from the lower pivot shoulder will have been taken previously by the means described just now. The wheel should fit firmly on to the pinion, and the slot be slightly undercut, almost square. If properly fitted very little riveting will suffice; on the other hand, if loosely fitted, no amount of riveting will make it sound, and probably the pinion face will be bulged and spoiled in the endeavor to get the wheel tight. Having marked just above the boss of the wheel with a safe-edged file, the wheel should be removed and the leaves turned to this mark. Care must be taken not to remove any of the diameter on the arbor in doing this.

You will now reduce the length of the arbors, leaving each about half a pivot longer than they will ultimately be required, cutting them off with the graver, and at the same time turning rather long centers. Having turned off one end it should be passed through a hole in a runner, and the extreme point turned true and conical; the opposite end should then be turned in the same manner. If all this is done, with the graver in the turn, the pinion will be kept centered; if you use a file for making the centers you will probably get out of truth. You will now proceed to mark the place for the shoulder of the upper pivot, leaving it a shade high and turn it down a little square; knowing where this shoulder will be you can see how deep the hollow can be cut. If there is much distance above the seat of the wheel a slight hollow will suffice; but if, as is usually the case, there is but little distance, the hollow will have to be deep and rather large, the object being to prevent the oil being drawn away from the pivot. Cutting a hollow in a Swiss pinion is not a difficult matter, as the steel is softer; nevertheless some little attention to the graver you use for this purpose will be necessary. Some workmen use squares and others lozenge gravers, but for the purpose in question I always prefer a square "Vautier" graver; in fact, the smallest size made for turning. These foreign gravers are superior articles in temper and finish, and are altogether pleasanter to work with. Then again the handle for this purpose should be very light cane or common Honduras mahogany, for instance; in fact for this purpose I prefer no handle at all, simply putting a small knob of sealing wax on the end and around the angles some distance up. Should it be handled, the wood should have a hole bored through; the graver can thus pass right up the handle and be fixed with shellac; it will thus

avoid breaking off a piece, or having it an unwieldy length. Having stoned up the graver to a long point, the sides, instead of being placed quite flat on stone to remove the burr, should be slightly raised in sharpening, so that a small facet is ground on each side of the belly, thus reducing the otherwise too acute angles and strengthening the point. This should be done on a smooth Arkansas stone; then, with a bell-metal polisher and diamantine, polish both sides and top angle; when finished, the point should be allowed to rest on the nail, and if properly done it will hang in and not slip. With a tool in this condition and a weak bow, the hollows can be cut both quickly and well; if a still better finish is desired, ready dry stuff on a peg will give it a nice, bright appearance. But to return to the pinion, having completed the upper hollow and turned down the arbor to meet the root (it should be considerably smaller at the root of the hollow than at the shoulder), the pinion can be reversed in the turns and lower hollow cut, and the pivot roughed out, the height being measured from the shoulder of the top pivot. If the pinion requires facing, I generally do it at this stage. Finally, turn down the pivots until they are about three degrees larger than they will ultimately be required, to allow for burnishing, being particularly careful to turn the shoulder perfectly square. The last cut should be down the shoulder of the pivot, so as to leave a *very slight notch*; when burnished this will disappear and no lump be perceptible in the corner. The burnishing will, of course, be done on the Jacot tool and with a flat burnisher.

HOW REPAIRS can legally be disposed of is a question the watchmakers have been asking of late, but the answers that have been given do not seem to be perfectly satisfactory. There is no doubt that this is a genuine case of hardship, for unless the watchmaker can dispose of articles repaired by him and unclaimed at the expiration of a reasonable time what recompense can he possibly have for his labor? The necessity of some action is apparent. But in order that he may so dispose of them the law requires that he shall have given the owners notice of his intention when he took the articles for repair. Of course, where a year or more has elapsed, the probability is very slight that anybody will ever return to claim the property, but slight as the chance is the repairer naturally hesitates to take it. Several devices suggest themselves as suited to the emergency. A placard bearing the announcement that articles left for repair will be sold for charges if uncalled for at the expiration of a certain time, may be placed conspicuously over the watch bench, or checks so stamped may be given out for each article received, but in every instance it is well to call the customers' attention to the rule for the purpose of avoiding all misunderstanding.

"Diamonds" in Marble.

THE following item appears in the *Baltimore Herald* of Oct. 11.

"David S. Wingrove, who conducts a marble yard at the corner of William and Montgomery streets, made a valuable discovery about three weeks ago in the shape of a Corean diamond fully half an inch long, a fourth of an inch wide and of about the same thickness. The gem was found by Mr Wingrove in the heart of a huge block of Italian marble, weighing several tons, and when the drill which was being driven into the block struck the diamond, it glanced and fell from Mr. Wingrove's hand. The owner of the stone has had it mounted in a heavy gold band without having it cut in the least. There are several instances known in this country of valuable diamonds being found in the heart of Corean block marble."

Mr. George F. Kunz says in regard to the above, that transparent crystals of quartz are a frequent occurrence in Carrara, not Corean marble, and occasionally three or four of these pellucid brilliant crystals are dotted over a surface a foot square, forming a most pleasing contrast to the white marble.



TO TEMPER CASE SPRINGS.—Draw the temper from the spring, and fit it properly in its place in the watch; then take it out and temper it hard in rain water (the addition of a little table salt to the water will be an improvement), after which place it in a small sheet-iron ladle or cup, and barely cover it with linseed oil; then hold the ladle over a lighted lamp until the oil ignites; let it burn until the oil is nearly, not quite consumed; then cover again with oil, and burn as before; and so a third time, at the end of which plunge it again into water. Main and balance springs may in like manner be tempered by the same process; first draw the temper and properly coil and clamp, to keep it in position, and then proceed in the same manner as with case springs.

TO REMOVE STAINS FROM WATCH DIALS.—To remove black or cloudy stains from porcelain watch dials, which are generally caused by the tin boxes in which they are shipped, wet a piece of tissue paper in nitric acid and wipe the dial. This will remove them instantly. After applying the acid, the dials should be immediately washed thoroughly with water, and then be dried in boxwood sawdust.

TORSION PENDULUMS.—A pendulum in which the whole rotates by the twisting of the suspending rod or spring, is called a torsion pendulum, but it will not bear comparison for timekeeping with the vibrating pendulum. They are only used when a long duration of the motion of the pendulum is required. Small clocks to go a year without winding are made with torsion pendulums about six inches long, which make fifteen excursions a minute. The time occupied in the excursion of such a pendulum depends on the power of the suspending rod to resist torsion, and the weight and distance from its center of motion to the bob. In fact, the action of the bob and suspending rod is very analogous to that of a balance and balance spring.

CHAIN RUNNING OFF FUSEE.—In the first place you must look and ascertain the cause of the difficulty. If it results from the chain being too large, the only remedy is a new chain; if not too large, and yet it runs off without any apparent cause, change it end for end; that will make it generally go all right. In cases where the channel in the fusee has been damaged and is rough, you will be under the necessity of dressing it over with a file of the proper size and shape. Sometimes you will find the chain naturally inclined to work away from the body of the fusee. The best way to remedy a difficulty of this kind is to file off a very little from the outer edges of the chain for its entire length; this, as you will see, will incline to work it on instead of off. Some workmen, when they have a bad case and a common watch, change the standing of the fusee, so as to cause the winding end of its arbor to incline a little from the barrel. This, of course, cannot do otherwise than to make the chain run to its place.

BLACK POLISH ON STEEL.—To obtain a beautiful deep black polish on iron or steel which is so much sought after, it is required to boil one part of sulphur in ten parts of oil of turpentine, the product of which is a brown sulphuric oil of disagreeable smell. This should be put on the outside as slightly as possible, and heated over a spirit lamp till the required polish is obtained.

TO CUT AND ROUND A WHEEL.—The blank to be cut is fastened concentrically to the dividing plate of the wheel-cutting engine, which is a plate having a number of small holes drilled on its surface. These holes are arranged in circles, each circle containing a different number of holes, carefully spaced, so that all the holes in each circle are equi-distant from one another. A revolving cutter is

brought to bear on the blank wheel, and cuts one space, the dividing-plate being kept steady the while by a pin pressed by a spring into a hole of the particular circle that has either the same number of holes as the wheel is to have teeth, or a multiple of that number. For instance, in cutting a wheel of 30 teeth, the 60 or 90 circle might be used. When the first space is cut the pin is shifted into the next hole (or next but one or next but two, as the case may be), and the cutter again brought into action, this time cutting the second space, and so on. For steel wheels serrated or milling cutting are used, and for brass, generally, a single or a fly-cutter running at great speed, or else two or more fly-cutters arranged in a boss, so as to follow one another in the same path.

THE GUARD-PIN.—The use of the guard-pin in the lever is to prevent the lever passing across the wrong side of action when the hands of the watch are turned backwards, for if the cannon-pinion is fitted tight on the arbor of the center wheel, and the hands are turned backward, all the pieces, up to the lever, would tend to be turned backward with great force; and now the guard-pin is brought into use by its pressure against the roller's edge, preventing the reversion of the pieces, and when the key is taken off the watch will go on all right. The force of the pressure of the guard-pin against the roller's edge is moderated by the nice fitting of the cannon-pin.

BADLY WORKING NICKEL BATH.—If a nickel bath which worked well heretofore, refuses to act, it can generally be restored by being thoroughly filtered and cleansing the receptacle.

LUBRICANT FOR OIL-STONE.—Tools are ordinarily ground with oil, which, thickening with time, makes the oil-stone very dirty. To prevent this, the following mixture of glycerine and alcohol is highly recommended. Use the following proportions, according to the size of the tool. If large, use 3 parts glycerine and 1 part alcohol; for smaller, 2 or 3 drops of alcohol to the glycerine are sufficient.

NEW FLUX FOR SOFT SOLDERING.—Chloride of zinc, which is extensively used in soft soldering iron, has the disadvantage that it causes rust, and besides this it is injurious to health, if used for soldering tinned-iron preserve cans and boxes. In order to prevent this a new flux has recently been introduced, consisting of a mixture of 1 part by weight of lactic acid with one part of glycerine, and 8 parts water.

IRON CEMENT.—A cement that will resist the blows of a sledge is as follows: Take equal parts of sulphur and white lead, with about one-sixth of borax; incorporate the three so as to form one homogeneous mass. When going to apply it, wet it with strong sulphuric acid, and place a thin layer of it between the two pieces of iron, which should then be pressed together. In five days the iron will have the appearance of having been welded together.

FICTITIOUS GOLD.—An excellent alloy, which is with difficulty to be distinguished from genuine gold, is the so-called alluminium bronze. It is used in different proportions, according to the purpose for which it is to be used; either 98 parts copper and 2 parts alluminium, or, 95 parts copper and 5 parts alluminium, or, 90 to 92½ parts copper and 10 or 7½ parts alluminium. These last alloys are the dearest, but at the same time the best, and, are peculiarly suitable for ornament trinkets, as they rarely ever lose their luster in open air.

UNTRUE GRINDSTONE.—Owing to the slovenliness and want of care of workmen, the middle of revolving grindstones are frequently dug out. Such a stone could be patched up in the following manner: Procure a piece of old grindstone, beat it very fine, and obtain sharp, white sand, from which sift out the coarsest part, and use the fine. This is worked into a dough with one-third of the mass of hydraulic lime or cement, and sufficient water glass. Cut under the hollow of the stone, or cut holes into it, and fill it out with the above cement, which hardens very quickly. Very good artificial stones are made in this manner, by filling the mass into forms.



PRIZE ESSAY OF MR. GROSSEMAN.—As is well known the subscribers to the Prize Fund of the British Horological Institute resolved that the first prize should be offered for the best treatise on the detached lever escapement. This prize of 30 guineas was announced by a prospectus issued in January, 1864. Moritz Grossmann, a member of the institute, competed for it, and the judges not knowing the name of the author, awarded the first prize to his production. Report has it, that they were perfectly dumbfounded when they opened the accompanying sealed envelope with the name, and found that the prize had been awarded to a German. Two judges proposed to reconsider their decision, but the third possessed enough of that "English fairness" to oppose the re-consideration, and Mr. Grossman received the award.

HOROLOGICAL SCHOOL AT GLASHUTTE.—THE CIRCULAR is frequently asked to give a scale of prices—itemized bill of costs—at the horological school at Glashütte. One of our German exchanges contains the following on the subject: Items of expenses per month, lodging, with bed [!] and coffee and roll in the morning, 10 marks; dinner at 45 pfennige=13.50 marks; supper, at 20 pfennige=6 marks; tuition, 10 marks; tools, 10 to 15 marks; laundry, 3 marks; sundries, 3 marks=total per month, 58 marks, or 696 marks per year. Taking into account the occasional festivals, excursions, etc., the grand total may increase to 800 marks per year, which sum is amply sufficient to maintain a student at the school. The general rate of exchange varies from 4 marks=96, or 96½, or 97 cents.

REGISTERING CLOCKS IN CABS.—The cabs in Hamburg have for the past three years been provided with a registering clock—taxanome—invented by Professor Nedler, of Wandsbeck. It records the length of the drive and tells the "fare" how much he has to pay, thereby protecting him against being swindled. When he enters the cab, he will see a dial at the back, with hand pointing to 0. The smallest charge is 50 pfennige per 1600 meters [1,000 meters are one kilometer, or 1,093.633 yards, or 0.62138 mile; 50 pfennige=½ mark=12 cents]; for each additional 400 meters, the hand advances by 10 pfennige. It makes no difference how many persons there are in the cab. A special clockwork registers how much the driver has taken in during the day. A special arrangement prevents unauthorized persons from interfering with the dial. Still another one indicates the distance traveled by the horses in a certain time. The taxanome is received with great favor by all travelers, and has also recently been introduced in Bremen and Berlin.

INFLUENCE OF THE ECLIPSE ON TELEGRAPHY.—The influence exerted upon submarine cables was recently tested. As is well known, there are constant electric and magnetic currents on the surface of the earth which are not without their influence upon telegraph wires, and still more so upon the submarine cables. These currents, however, are extremely feeble, and can be recognized only by means of very delicate instruments. Observations have shown that the electric currents are very variable in their strength, and have two maxima and two minima, like tide and ebb, which has led to the hypothesis that they are caused by the sea and moon. The total eclipse of August 19 offered the desired opportunity of testing this hypothesis, for which purpose the cable lying between Wladivostok (Russia) and Nagasaki (Japan) was used. At the commencement of the eclipse the currents were normal, but they soon commenced to increase in strength, and at the moment of totality, they were nearly twice as strong. From this time their strength decreased until at the end they were normal again. This result shows the influence of both the sun and moon upon the electric and magnetic currents of our earth.

THE METRIC SYSTEM.—A German paper says that although the metric system of weights and measures has been introduced in Germany for the last fifteen years, yet there are people who do not yet understand it, and make their purchases in ½, ¼, ⅛, etc., in place of ½, ⅓, ⅔, etc., and are in this manner largely swindled by the dealers. The purchaser who buys in quarter pounds in place of one-fifth pounds, loses four per cent., which amounts to quite a sum at the year's end.

WATER WORKS AT CHAUX-DE-FONDS.—The town of Chaux-de-Fonds, in Switzerland, known to every watchmaker in the world, has waterworks, which are perhaps unrivaled. The town, of 25,000 inhabitants, lies about 1,000 meters high, and is surrounded by waterless mountains, so that the people had therefore to catch the rain-water in cisterns, and in rainless seasons they suffered for want of water. A civil engineer, Ritter, of Neuchatel, succeeded in lifting the water from a number of springs in the valley of the Areuse, issuing at a height of 630 meters, to a height of 1,120 meters upon a mountain, from which it runs into the town at a quantity of 3,000 liters per minute, thereby forcing it into the highest buildings in the town. The pump works lift the water 500 meters, without intermediate stations.

NOVELTY TO A WATCH.—The *Journal des Debats* describes a novelty introduced in the watch by Armand Schwab. Upon the ordinary dial is another smaller, entirely similar to the larger. Its hands, however, can be brought to 0 by a pressure upon a small spring in the stem. When, for instance, the wearer takes a cab by the hour, he brings the hands to 0, and is then enabled to read off the time consumed. In a railway, the train stops 25 minutes for dinner; bring the hands to 0, and you know exactly how much time to dally over the dinner. The wife boils eggs to be done in three minutes, but after a while she forgets the time when she began to count. It is also serviceable for the photographer and other like tradesmen.

UNIFICATION OF THE HOUR.—A French paper says that the representation of Colonel Laussedat, the scientific director of the Conservatory of Arts and Trades, the government intends to at once adopt standard time in France, taking for this the mean time of the meridian of Paris, to be used exclusively throughout the extent of French territory, in all cities, towns, railway depots, etc.

ELECTRICAL COUNTERS.—A competitive participation for electrical counters (dummy clocks) for the city of Paris has been invited, and ten thousand francs will be awarded to the inventor of the successful counter. Five other premiums of two thousand francs each will be given to the second best inventions.

THE WATERBURY WATCH IN GERMANY.—It goes for naught to say that the Waterbury watch is meeting with violent opposition in Germany, and its agents are constantly in court to sue libellers. As might be expected this violent opposition, on part of some watchmakers there, is as good an advertisement as its agents could desire, and helps the sale of the watch amazingly.

CORAL.—The value of coral depends on its color and size. The white or rose tested variety stands highest in popular esteem, perhaps chiefly because it is the rarest. It is mostly found in the Straits of Messina, and on some parts of the coast of Africa and Sardinia. The bright-red coral, in which the polyps are still living when it is fished up, comes next in value. Dead coral has a dulled tint, and is consequently of less value. Two entirely different substances bear the name of black coral. One of them is not, properly speaking, coral at all, and is, commercially, worthless, as it breaks into flakes instead of yielding to the knife, though it is often sold as a costly curiosity to foreigners. The other is common red coral which has undergone a sea change, probably through the decomposition of the living being that once built and inhabited it. It is not much admired in Europe, but in India it commands high prices, so that large quantities of it are exported.



TRADE GOSSIP.

The following named members of the trade were noticed in town since our last issue: E. H. Ayres, Elmira, N. Y.; C. S. Stiff, Little Rock, Ark.; Frank O. Hadley, Kansas City, Mo.; Mr. Pickering, of Pickering & Jelliff, Mansfield, O.; John M. Bonnet, Zanesville, O.; Mr. Lowengart, of M. Scooler & Co., New Orleans, La.; James A. Main, Warsaw, N. Y.; I. G. Willeke, Springfield, Mo.; M. W. Shaw, Galveston, Texas; H. D. Conse, Newton, N. J.; J. H. Ma-on, Binghamton, N. Y.; Joseph Jerger's Son, Thomasville, Ga.; Mr. Freeman, of Freeman & Crankshaw, Atlanta, Ga.; Mr. Brunner (and sister), Cleveland, O.; M. B. Wright, Kansas City, Mo.; H. H. Mithoefer, Cincinnati, O.; Mr. Berg, of Hyman & Co., Chicago, Ill.; Mr. Hosley, of Woods & Hosley, Springfield, Mass.; Mr. Mix, of James Mix & Co., Albany, N. Y.; T. & E. Dickinson, Buffalo, N. Y.; C. G. Calvert, Lexington, Ky.; George Chambers, Mount Clemens, Mich.; T. Dibble, Uradilla, N. Y.; E. R. Mason, Halstead, Pa.; R. N. Richmond, Columbia, S. C.; G. C. Allis, Birmingham, Ct.; C. S. Hayes, Norfolk, Neb.; J. M. Day, Pensacola, Fla.; Mr. Miller, of E. Miller & Son, Westfield, N. J.; Henry Guinder, of A. B. Griswold & Co., New Orleans, La.; W. S. Cornish, Malone, N. Y.; H. D. Cone, Cedar Rapids, Ia.; James Allan, Charleston, S. C.; I. Fay, Worcester, Mass.; C. E. Eager, Syracuse, N. Y.; Edward Scholtz, Newbery, S. C.; J. Dean Hawley's Son & Co., Syracuse, N. Y.; Edwin T. Child, Hamilton, Bermuda; Jacob Hammel, Sr., Syracuse, N. Y.; P. D. Walter, Lockport, N. Y.; W. G. Bailey, Helena, Mont.; W. T. Burritt, New Britain, Conn.; Mr. Miller, of Tapken & Miller, New Brunswick, N. J.; L. E. Higley, Hobart, N. Y.; A. S. Simmons, Wappinger's Falls, N. Y.; J. N. Young, Petersburg, Va.; F. D. Kernochan, Middletown, N. Y.; R. S. Gardner, Birmingham, Conn.; Henry Silverthorn, Lynchburg, Va.; P. H. Lachicotte, Columbia, S. C.; J. W. Fairfield, Butte City, Mont.; C. E. Mann, Mason City, Ia.; Hugo Beil, Lawrence, Mass.; H. Ross, Montreal, Quebec; Jacob Karr, Washington, D. C.; W. C. Kendrick, Louisville, Ky.; Mr. Theus, Savannah, Ga.; M. W. Galt, Washington, D. C.; W. F. Fischer, Chatanooga, Tenn.; E. W. Blue, Atlanta, Ga.; Mr. Burnham, Burlington, Ver.; E. G. Seymour, Syracuse, N. Y.; Henry Birks, Montreal, Quebec; E. J. Smith, Detroit, Mich.; E. H. Hobbs, Selma, Ala.; C. S. Saxton, Springfield, Mass.; Mr. Frank, of Foltz & Frank, Akron, O.; Isaac Lowenthal, Syracuse, N. Y.; J. W. Cusack, Troy, N. Y.; S. Thomas, Jr., Charleston, S. C.; T. C. Tanke, Buffalo, N. Y.; F. F. Ward, Mount Vernon, O.; Mr. Hopper, of Hopper & Murphy, Maysville, Ky.; Henry Sadtler, Baltimore, Md.; A. G. Earle, Colorado Springs, Col.

—Norden & Co., diamond cutters, have removed to 61 Nassau street.

—Alois Kohn & Co. are showing some pretty novelties in gold Queen and Jersey chains.

—Mr. Frank F. Bonnet, formerly of the firm of Mulford & Bonnet, 21 Maiden Lane, has recently opened a retail store at Columbus, O.

—Mr. E. J. Adams, formerly of Great Falls, Mont., has sold out there to Mr. E. T. Marston, and opened up a new store at Sturgis, Mich.

—D. F. Foley & Co., makers of a complete line of novelties in gold pens, pencils, etc., especially adapted for the holiday trade, are finding business brisk at present.

—G. B. Barrett & Co., of Pittsburg, Pa., are showing a larger line than ever before of diamonds, diamond and other jewelry, watches, etc. They make a specialty of American movements.

—A beautiful window was recently placed in the Ascension Church at Ipswich, Mass., as a memorial of Mrs. Julia Randall Appleton, the deceased wife of Mr. Daniel F. Appleton, of Robbins & Appleton.

—It is said that the Krupp works of Essen are to go into the manufacture of aluminum. The material used is cryolite, from Greenland, and chemically pure aluminum is promised at about \$1.50 per pound.

—Charles A. Russell & Co., 102 Friendship street, Providence, R. I., who manufacture a full line of plated emblem and society badges, charms, lockets, etc., report an excellent trade this fall. They sell to the jobbing trade only. Retailers will do well to inquire after these goods.

—J. T. Scott & Co. are at present having a run on diamond goods, loose and mounted. They show a large line.

—The watch oils refined by Mr. Wm. F. Nye, at a temperature lower than 20 degrees below zero, are freed from any impurities that might corrode or blacken the pivots of a watch. This process of refining also renders the pivots upon which the oil is used perfectly unaffected by heat or cold.

—The business connection long existing between S. F. Merritt, of Springfield, Mass., and S. M. Griswold, has recently been severed and Mr. Merritt will continue alone to manufacture and sell his popular line of eye-glass holders and chains, etc. His patrons are requested to address him in the future at Springfield, Mass., where all orders will receive prompt attention.

—The New York Standard Watch Co. report sales to the retail watch dealers for the month of October as very satisfactory. The sales department, 83 Nassau street, is quite a busy place of late. Many watchmakers who have tested the "Standard" movement are pleased with its performance, and when a watch of this price is wanted are recommending it to their customers.

—The new steamboat of the Fall River Line, now being built, is expected to be ready for travel next spring. It is to be called the *Puritan*. It is the largest steamboat of its class, being 420 feet in length and 91 feet in width over the guards. It is to have 350 state rooms, accommodating in all 1,500 passengers. The estimated horse power of its engines is 7,500. The *Puritan* will cost about \$1,500,000.

—Hollinshead Bros., of Philadelphia, is a young and enterprising jobbing firm, who are steadily working their way upwards by persistent industry and by a habit they have of thoroughly pleasing their patrons. Their line includes American watches of all makes and grades, gold and silver cases, and gold and plated jewelry of every description. They also have a complete engraving and repairing department.

—In the great Republican parade on the afternoon of November 3, the employees of Robbins & Appleton will turn out 250 strong. The famous Waltham Watch Factory Band is to come to New York and march at the head of this division, which will form a part of the jewelers' contingent in the great parade. The officers of the Robbins & Appleton division are as follows: Marshal, A. M. Crommelin; captains, John Crocker and W. G. Appleton; aids, Appleton Smith, Fred. Leach, P. K. Hills, Jr., John R. Martin, C. H. Walker and J. R. Gleason.

—We have received from the Towle Mfg. Co. their latest catalogue, containing superb illustrations of three of their popular patterns in silverware, namely, the "Orchids," the "Arlington" and the "Pomona." The catalogue consists of 36 very large and heavy pages, bound in calendar style and tied with silk tassels. Each page is richly tinted in delicate shades, and the illustrations are artistically grouped. The catalogue also contains illustrations of other patterns in silver, and of their latest pattern in superlative silver plate, called the "Eudora." The catalogue, as a whole, is an exceedingly creditable piece of work, no whit inferior to any of the handsome catalogues which have appeared this fall.

—A dangerous fire started in the building at the rear of 19 John street on the night of October 15, in the pen factory of Mr. J. M. Bogart in the fourth story. The flames communicated to the shop of Geo. A. Eaton & Co. on the same floor, and had it not been for the prompt work of the fire department, the buildings surrounding this one, occupied almost entirely by jewelers, would have been burnt to the ground. As it was, all of the occupants were damaged by water and business had to be suspended for a day or two. All that will be needed is a big fire to prove to the owners of the many miserable old buildings in the jewelry district that the jewelers ought to have modern fire-proof buildings instead of the present ramshackle structures.

—Crouch & Fitzgerald's new store at 14 Cortlandt street, is now one of the finest trunk establishments in the city.

—A large plate glass window in the store of Mr. John Foley was blown out by an explosion of gas on the morning of October 16.

—A very good watch case for railroad men is the new 16 size screw bezel and screw back crescent case, which has lately appeared on the market. It is made for a Waltham 16 size open face movement.

—Mr. Henry C. Haskell, manufacturer of rings, etc., of 18 John street, has in stock an assortment of puzzle rings, for which there seems to be an increasing demand. He shows one style in his advertisement this month. Mr. Haskell also makes a fine line of class rings, pins, etc.

—The Pairpoint Manufacturing Co. show many novelties for the fall in the shape of toilet articles, fancy lamps, etc. They also have just made up several new and pretty designs in tea sets. An especially attractive one has a handsome oxidized border of *repousse* work upon a plain satin-finished ground, making a beautiful contrast.

—Mr. Louis Rehmann, of Rehmann Bros., Newark, N. J., has sold out his interest in that firm to his brother and Mr. Thomas C. Jones, a marble dealer, of New York. The firm name is now Rehmann & Jones. The line will be the same as heretofore, bracelet mountings and buttons, and the new firm expect to open an office in New York soon.

—Mr. E. A. Thrall, who is in the habit of keeping his show windows at 3 Maiden Lane just a shade or so better dressed than any of his neighbors, exhibited two cloths of green plush for several days last month as the ground work of his fine display of jewelry. It was exceedingly pretty and attractive, and had the effect of capturing the Irish vote.

—H. F. Barrows & Co. report that their new Queen chain with protection bar has been received by the trade with great satisfaction. Our readers will observe in this number of THE CIRCULAR an illustration of a still newer design by H. F. B. & Co. of "The Victoria," in which the ornamental pendant consists of a banjo, which will undoubtedly commend itself as a holiday purchase to the innumerable army of amateur banjoists in the United States.

—A good place for visiting jewelers to call when they are in the city is the salesroom of the F. J. Kaldenberg Co., 371 Broadway. In walking sticks they make a large line adapted for sale in jewelry stores, while in fancy articles of all kinds their line is very large and cannot be described in our small space. Dealers who cannot call should send for a catalogue, for many things are represented there of which they stand in need.

—Bernard McGuigan, once a well-to-do tinsmith in Jersey City, was held to the Grand Jury October 18 by Justice Weed. Last July he began selling jewelry on installments for Mr. Thos. Morton, No. 202 Broadway, New York, who furnished him with samples valued at \$550, and a watch valued at \$160, on an order. McGuigan, it is charged, failed to make returns. Mr. Morton, after giving the man considerable time, pressed the prosecution.

—Our esteemed Canadian contemporary, *The Trader*, concerns itself not alone with matters affecting the jewelry trade; it also takes a lively interest in the political future of Canada. An editorial in its October number upon that much mooted question of annexation introduced a line of argument that recalls the comical scene between the lover and the girl who refused to marry him. The girl told the ardent chap that though she had a great respect for him she couldn't marry him; but "I'll be a sister to you." Here is what *The Trader* says: "Canadians respect the people of the United States, and desire to do all the trade with them that they can to their mutual advantage, but they want them to understand it so distinctly that there can be no mistaking their meaning, that they desire no closer relationship, politically."

—E. Ira Richards & Co. have many excellent new designs in jewelry, some of which cannot be seen elsewhere. Dealers should not neglect to look through the line. In quality the goods can be commended, for they are now, as reputed for many years, the best quality of plate that can be made.

—J. G. Cheever & Co., of North Attleboro, Mass., have for their trade mark a swivel, with the initials of the firm and an anchor stamped upon it. This firm manufactures a fine line of rolled plate chains, and dealers who prefer this brand should look for the trade mark upon the swivel of each chain.

—Attention is called to the illustrated advertisement of the Nicholson File Company. The files made by this company for the use of watchmakers, jewelers, etc., are beautifully shaped, and especially adapted to certain kinds of work. They are very durable, and the makers justly claim them to be superior to imported files.

—L. A. Cuppia, of 19 Union Square, is just now showing some odd new designs in buckles, bangles, chatelaines, chain bracelets, etc. made in silver. These are selling well in first-class retail stores, and some of the patterns are in such great demand that they can hardly be supplied except upon long notice. These goods must be seen to be appreciated.

—The idealized monumental statue of the late Miss Hollis, of Boston, daughter of Consul-General Hammer, of Denmark, which was recently on exhibition in Tiffany's window, is believed to be the first statue done in this country in the galvano-plastic process. The statue is seven feet high, and was finished last summer by the sculptor, Mr. Carl-Rohl Smith, just before he went abroad.

—The Rogers & Hamilton Co. illustrate in their advertisement this month one style out of a large assortment of their "combination sets." These combination sets are shown in many combinations, such as a butter knife and sugar spoon, a dessert knife and dessert fork, etc. They are packed in neat boxes with attractive satin lining, and the sets are all made up in the best quality of plate.

—The Dennison Mfg. Co. are sending out samples of their different patterns of suspension rings, hooks, etc. These articles are most useful for hanging jewelry and other articles in windows or on walls. In jewelers' findings of every description the Dennison Mfg. Co. make a most complete line. Every quality and style are represented among their stock. Samples will be sent upon application.

—Mr. Charles Jacques, importer, of 2 Maiden Lane, who always carries a fine, well-assorted stock of French clocks in onyx, marble, bronze, etc., is showing this fall a larger line than ever before, and far superior in material, workmanship and finish to the ordinary importations. His onyx clocks range in price, even as low as \$16, list. Photographs and catalogues will be sent by Mr. Jacques to dealers who desire them.

—The Custom House officers recently seized a large quantity of garnet watch jewels and other dutiable goods which were being smuggled by a man, named Henry A. Norman. Norman had the goods concealed in paddings on his clothing and in a feather pillow. He said he was in the employ of some American watch companies, but this is, beyond doubt, an effort of his to shift the responsibility for his acts. The goods he attempted to smuggle are valued at \$1,500. He was held in default of \$3,000 bail, and later was sentenced to one year's imprisonment.

—The Chas. D. Pratt Company, 33 Chambers street, have fitted up their large establishment with rare taste and judgment. The imposing array of bronzes and French clocks, interspersed with a few rare marbles and viewed under soft-tinted effects of light, gives to their upper show room all the appearance of an art room, while in multitudinous variety of fancy goods and novelties the main room is enough to bewilder anybody except a jeweler who knows a good thing when he sees it. Jewelers making fall purchases ought not to forget No. 33 Chambers street.

—Stern & Stern are having a good trade in their popular "Eclipse" watch cases. These are very desirable for the holiday trade and are always saleable.

—The trade will be pleased to hear that the wife of Mr. Gilbert T. Woglom, who has been seriously ill for some time, is now much improved and in a fair way to recovery.

—Mr. Fred. D. French, well known in the trade, formerly a traveler for Enos Richardson & Co., died two weeks ago, aged 32. He had been ailing for several years. He was a brother of Mr. George A. French, of Wm. S. Hedges & Co.

—Hancock, Becker & Co., whose line of imitation diamond goods is meeting with such a great demand that for a time they were unable to fill orders promptly, have increased their facilities and announce that after November 1st they expect to be able to fill all orders without delay.

—Mr. Samuel Lawson, 11 Maiden Lane, has admitted into partnership his brother-in-law, Mr. Henry Van Winkle, who for 15 years past has been in his employ. The style of the new firm is Lawson & Van Winkle. They will continue to manufacture, in addition to a regular line of onyx goods, a line of gold enameled flower work and rich colored gold jewelry.

—The New York Mineralogical Club have started a subscription list for the purpose of buying for the city the B. B. Chamberlin collection of minerals of Manhattan Island, placing it in the Metropolitan Museum. It is valued at \$1,500. Any persons who wish to further this worthy object may send in their subscriptions to Mr. George F. Kunz, with Tiffany & Co., who will return club receipts for all amounts received.

—Mr. N. J. Felix, watch case maker, of 71 Nassau street, New York, has made a great success of his specialty of repairing damaged watch cases. No matter how badly battered or out of shape the watch case may be, when it has undergone the expert treatment of Mr. Felix it looks almost equal to new, and the cost of it amounts to a very small percentage of the cost of the case. Mr. Felix, however, is also a large manufacturer of special new cases, which stand high in the estimation of the trade, and has patented a spring for American cases which is considered an improvement on the old method. We advise all to send their battered cases to him for renovation, and to observe the improvements in his new cases.

—Goodman & Klein, of Cleveland, O., made an assignment on October 21. They kept a small establishment, occupying but half a store at 7 Euclid avenue. Their liabilities are estimated at \$40,000 and their assets only \$15,000. They claim to have done most of their business in and around Cleveland, and say they gave considerable credit. They bought most of their stock from eastern houses, who, considering their capital, were exceedingly liberal in extending credit. Goodman claimed to be the monied partner, and last August made a statement to the Jewelers' Mercantile Agency, showing that he had put \$3,000 into the business individually, and \$4,000 of his wife's money. He claimed then that the firm's indebtedness did not exceed \$3,000.

—J. M. Chandler & Co. failed on October 18th, with a list of 175 creditors, whose claims aggregate in the neighborhood of \$50,000. The failure was not a great surprise. A creditors' meeting was held shortly before the failure in the Board of Trade rooms, Mr. Chandler being present, and an extension of time was granted him. He showed at that time assets fully \$10,000 above all liabilities. A meeting of his eastern creditors, who represent more than half of his indebtedness, was held in Providence two days later, and they were disposed to be lenient towards him. The reports have it that he could not make any terms with the watch companies, and was thus compelled to suspend. Last summer he was expelled from the Jobbers' Association for violation of their rules. A report from Providence says that the assets of the company are about \$45,000.

—The new puzzle ring made by Mr. H. C. Haskell has attracted much attention wherever seen, and is the source of much worryment on the part of those trying to solve the puzzle. Only one person thus far, outside of those connected with its manufacture, has solved it, namely, Mr. Homrich, of Martinsburgh, W. Va., who succeeded only after more than three hours of intense application.

—The *Outfitter*, in noticing the removal of Howard & Son into their new factory in Providence, takes occasion to make the following mention of the members of that enterprising firm: "Mr. Howard, Sr., is a veteran, both in the jewelry trade and as a soldier, for he served his three years in the war. He has built up the splendid business of his concern from the bottom. He is, moreover, a gentleman of the finest social tastes, and happiest himself when diffusing happiness among his fellows. His son, Mr. Stephen C. Howard, is a worthy chip of the old block, and together they make a very strong team."

—Any one who knows the enormous cost of fine printing in colors will appreciate the liberality of the American Mfg. and Supply Company, who have just issued a handsome catalogue of their marble self-winding clocks, printed in colors which simulate exactly the colors of the clocks. Seven designs of the finest French marble cases are shown. These are now made, for the first time, containing self-winding movements with the striking attachment, and dealers may thus offer their customers a clock which needs attention but once a year, which runs accurately, strikes correctly, and makes as fine an appearance as any clock of its character ever made. Every dealer should get a copy of the new catalogue.

—At the regular meeting of the New York Academy of Sciences, held on October 15, 1888, Mr. Kunz announced that Mr. J. A. D. Stephenson, of Statesville, N. C., who first called the attention of northern mineralogists to the green beryls in North Carolina in 1875, had kindly loaned him a crystal of dark green aquamarine, which he exhibited, weighing 25.4 oz., found on the 12th of January, 1888, by a farmer in ploughing near Little Robinet's Store and Little River Church, near Russell Gap Road, Alexander Co., N. C. This locality is about 10 miles from the emerald and hiddenite mine, 12 miles from Miller Farm, where emeralds have been found, and is the largest beryl that would afford gems found in North Carolina.

—The Sterling Company, that enterprising concern which commenced the manufacture of fine silver jewelry and novelties about a year ago, has already been obliged to enlarge its plant in Providence. The venture has been a success from the start, and the line of goods shown by the travelers of this house is truly unique. Lately many new articles have been added which, because of their great diversity of use and pattern, can only be classed under the head of "novelties." Silver goods of this kind can only be handled by the first-class trade. Pin cushions at five and six dollars each are a luxury, and every jewelry store cannot keep them, but from the great number of these and other similar articles now sold, the taste for luxury must be rapidly on the increase.

—Mr. Oliver M. Farrand, of 3 Maiden Lane, has an ancient incense ladle of curious pattern in his show window. The ladle is about the length of a tea spoon, but the bowl is much larger, deeper and almost circular in shape. The handle is heavy and curiously wrought. Within the edge of the bowl is the following inscription: "IACOB X CONRADIS X MEIER X ANNO X 1634," which shows that the ladle was made during the Thirty Years' War in Germany, and was probably a votive offering by Meier to some Catholic church. Upon the back of the bowl is an elaborately engraved scene of Abraham bending over Isaac with knife uplifted, and an angel descending from above. About the edge, forming a border to the scene, is the following inscription in obsolete German. "WOL GOT DEN HEREN FRUCHTET WEDERVART NEN LEIT SUNDER. HE WERT ERLOS." Translated, this would be about as follows: "Whoso fears the Lord God no evil befalls him; but he shall be delivered." This would appear to relate to the scene between Abraham and Isaac.

—A. Bernhard & Co., 2 Maiden Lane, are showing some pretty patterns of diamond jewelry for the holiday trade. Attention is called to their advertisement on another page.

—Mr. O. Schwencke, of 8 John street, maker of hair jewelry, for which he keeps constantly on hand a full line of mountings, now has excellent facilities for filling orders on short notice.

—Mr. L. W. Pennington, 81 Mechanic street, Worcester, Mass., receives complimentary mention in a local paper. He is said to be a skilled jeweler and diamond setter of twenty years' experience.

—Henry Adams, the thief who filched \$700 worth of diamonds from Ludwig Nissen & Co., 18 John street, and is suspected of having also stolen the \$7,000 worth of stones from Burt & Hurlbut last April, was recently sentenced to 10 years in State's prison, this being the extreme penalty.

—It seems that the automatic device, which was described in these columns last month, as used by Robbins & Appleton to display the merits of the Waltham non-magnetic watches, is an invention of Mr. Alvin Lawrence, of Lowell, Mass., who sold his invention to the American Waltham Watch Company.

—At a recent meeting of the shareholders of the opal mines of Queensland, Australia, it appeared by the speech of the chairman that the company had sold opals to the value of £7,576 during the year, and that these had netted a profit of £4,664 12s. 4d. to the shareholders. The chairman also alluded to the difficulties in the way of selling opals, one of them being the fast-waning prejudice against the opal as an "unlucky" stone, and another that hitherto the business in opals has been confined to certain channels, out of which it has been found difficult to draw the it.

—Frank Mauser & Co., silversmiths, of North Attleboro, Mass., have admitted into their firm Mr. Harvey Richards Franklin, a young man recently graduated from Yale. Mr. Franklin will travel for the firm, covering New York city and the east. Their other travelers are Mr. P. J. McArdle, covering the southern and part of the western territory, and Mr. P. H. Bettman, covering the remainder of the west and all of the northwest. This firm manufactures a general line of novelties in silver, comprising fine toilet goods, stationery, novelties, etc. They produce a peculiarly fine finish upon their goods, which are shown in many unique and original designs.

—The trial of William H. Payne, of the defunct firm of Payne, Steck & Co., is still in the dim and hazy distance. The preparing of his case for trial, which has several times been transferred from one Assistant District Attorney to another, is now in the hands of Assistant Dos Passos, who says that he cannot possibly attend to it for several weeks owing to the pressure of other business. He says, by way of excuse, that the Payne trial, being an important one, the papers should be carefully prepared, as the defendant is using every means to thwart the ends of justice. Meanwhile Mr. Payne is occasionally to be seen on the street apparently unconcerned, though better dressed than most of his creditors.

—The Waterbury Clock Company, among their new fall patterns, show some novelties in automatic and motion clocks, made in nickel, and of the same size and appearance as the ordinary small nickel clocks. The automatic clock is made something after the manner of the automatic watches, there being only one hand upon the dial which points out the minutes, and the hour being indicated by a figure which appears in a hole in the dial at the figure 60. The time is thus told by this figure, and the number of minutes indicated by the hand. In motion clocks there are now five designs shown, each of which has a mechanical figure upon the dial. The "steamboat" is illustrated in the advertisement this month. In this design the wheel of the steamboat revolves and the walking-beam makes its regular up and down motion. The other designs are the "Laundry," the "Druggist," the "Colored Banjoist" (this is a very comical design), and the "Mikado."

—Mr. D. G. Hall, the veteran jeweler of Auburn, Me., has constructed a handsome "Grandfather's Clock" out of some historic mahogany, which attracts considerable attention in his store. It stands nine feet eight inches high, and the dial shows the time of day, the day of the month and the phases of the moon.

—The store of Mr. F. A. Hubbard, Brattleboro, Vt., was recently the scene of a mysterious burglary. About \$300 worth of goods was carried off on the night of October 17 by some thieves who had forced an entrance through a window. The thieves were evidently amateurs, as they left palpable proofs of a very bungling job, and the affair created a sensation in the town. A few mornings afterwards, a young man about town came to Mr. Hubbard and through him all the missing goods were discovered. He said he had been off on a lark the night of the robbery, and followed the thieves to the place where they had concealed the goods. His story is not generally believed.

—The Spencer Optical Mfg. Company, in sending out its new catalogue this fall, which is just ready, have inserted in each a valuable frontispiece, being no less than an engraving upon steel plate of Messrs. James E. and John S. Spencer. The likenesses are excellent, and the many thousand customers of this house, who have never seen the proprietors, are thus put in possession of their admirable portraits. For the past twenty-nine years these gentlemen have made the optical business a study, and, at the present time, with a large and still increasing business, they see the legitimate result of their efforts. Their new factory and their New York salesroom have all the facilities for carrying on the most extensive optical business in all its details. The many labor saving devices introduced into their factory from time to time, have enabled them to bring prices down to a low level. Dealers should write for this new catalogue, which is, perhaps, the largest and most complete ever issued in this line. It is fully illustrated.

—Saturday, November 3, is to be a day of great political excitement. The business men of the Republican party, including many in the jewelry trade, are to turn out in the afternoon in the great Republican Business Men's parade. On the evening of the same eventful day a similar parade will take place, the participants being the Democratic Business Men of New York City. The two jewelers' organizations, Republican and Democratic, which have been busy for several months distributing campaign documents, soliciting subscriptions to the campaign fund and making political partisans of the greater part of the trade, have succeeded in enrolling a large number of names to their respective lists of members. The Republican club, which had its headquarters at 169 Broadway, had over 1,000 names on its roll. The Democratic club for a while had headquarters at 42 Maiden Lane, but later opened up a larger hall at 175 Broadway, where they held public meetings daily, assisted by a brass band and political orators.

—Siegfried Sittner, a young man who lately kept a small repairing shop at 23 Maiden Lane, was discovered last month to have swindled Mr. H. H. Heinrich, of 14 John street, and several other jewelers. He was employed by Mr. Heinrich to rent chronometers, and for a while seemed to do a successful business, as Mr. Heinrich's establishment was unable to make chronometers fast enough to keep the young man supplied. One day Mr. Heinrich sent a bill to a firm to which Sittner claimed he had rented a chronometer, and the firm sent back word they did not know the alleged agent. It then leaked out that he had disposed of many other chronometers in like manner. He paid the monthly rents to Mr. Heinrich regularly, but had pawned the chronometers. When arrested he confessed his crime and turned over all the pawn tickets to Mr. Heinrich. Upon his arrest and conviction, the goods were taken from the pawnbrokers and turned over to the property clerk, who delivered them to Mr. Heinrich last week when Sittner was sentenced. The other jewelers whom Sittner swindled gave him articles on memorandum. The total amount of his swindling operations is put at about \$6,000, Mr. Heinrich's chronometers alone being valued at \$2,000.

—Mr. Charles J. Squire, of 1,043 Fulton avenue, Brooklyn, failed on October 14.

—A gas stove has been invented to rival the book case folding bed. It is concealed in a handsome colonial clock case.

—Alfred W. Redfern, a watchmaker, of 71 Lexington avenue, Brooklyn, committed suicide on October 16, by taking rat poison.

—Mr. George MacNevin Usher, once a manufacturing jeweler of New York, died last month at his home on Staten Island, aged 80.

—Mr. H. H. Heinrich, 14 John street, recently had one of his chronometers accepted by the government over several strong competitors.

—The Sams Jewelry Company was incorporated at Omaha, Neb., on October 8. The incorporators are C. B. Russell, H. S. Howard and J. E. Ebersole.

—The Trenton Watch Company and Ott & Brewer had beautiful exhibits of their products at the great inter-state fair held in Trenton, N. J., early in October.

—Illinois watches cannot be made fast enough to keep up with the demand. The New York agent is far behind his orders. The ladies' watches seem to be in special favor.

—Gourlay & Brodie, Syracuse, N. Y., failed October 4, making two confessions of judgment to the mother of Brodie, amounting to \$2,528.54. Their liabilities are placed at about \$5,000, and their assets at about \$2,500.

—We have received of M. Zineman & Bro., Philadelphia, Pa., a copy of their latest catalogue, containing, besides a long list of optical goods of every description, some valuable hints to opticians. It can be had upon application.

—Mr. Augustus Schwerter, of 42-44 Canal street, New York City, wants to buy a new or second-hand copy of Excelsior's Treatise on the Balance Spring. Any of our readers wishing to dispose of a copy may do so by addressing him direct.

—The Non-Magnetic Watch Co. of America have been awarded the gold medal for best watches at the Centennial Exposition at Cincinnati. These watches contain Paillard's patent non-magnetic compensation balance and hair spring.

—Mr. John Tichenor, lately with Durand & Co., was admitted into partnership with Mr. C. E. Hansen, of 23d street and Sixth avenue, on October 15, and the firm style is now Hansen & Tichenor. They will continue the manufacture of fine jewelry. Mr. Tichenor's long experience with Durand & Co. should prove valuable to the new firm.

—Rogers & Brother show an attractive line of novelties in plated ware for the holiday trade, consisting of all sorts of useful and ornamental articles for the person, the toilet or for house decoration. The articles are too numerous for separate mention, and dealers will find it necessary to inspect them.

—J. Eugene Robert & Co., importers of watches, besides their usual large assortment of complicated timepieces, are now showing a line of watches very attractively cased in silver and gold, especially suitable for holiday trade. Dealers should see this stock before making their purchases for the holidays.

—Cross & Beguelin report a fall trade thus far which slightly exceeds that of last year. They are having a run on small size Swiss watches, of which they have a large stock, well assorted. In diamond goods this house is constantly increasing its line, and the stock now shown contains a fine assortment of mounted goods in desirable patterns.

—Mr. Frank P. Miller, lately with the Waterbury Watch Co., has received the appointment of general selling agent of the New York Standard Watch Co., 83 Nassau street. It is Mr. Miller's intention to have the "Standard" watch on sale in most of the retail stores of the country before very long, and his ability to achieve this result is hardly to be doubted.

—The E. N. Welch Mfg. Co. is fully prepared this season to show its patrons a line of clocks which includes a large assortment of every variety. Besides their own excellent make of clocks, they keep in stock a good line of imported French clocks of the best grades. Mr. Wm. H. Atwater, the New York representative of this company, after a siege of illness, is again at his desk.

—The store of Mr. Morris Schiff, 1057 Third avenue, was recently the scene of a violent attempt at theft. A man hurled a pavingstone through the plate glass window, and hurriedly thrust his hands through the opening and seized a number of watches. The street was crowded, but before any one realized what had occurred the man was off, closely pursued by a police officer, who, after a rough and tumble fight, made him a prisoner. The thief turned out to be an ex-convict, Lawrence Harris by name, aged 32, and deaf and dumb.

—Mr. E. E. Stillman, formerly with the New Haven Clock Co., will act as salesman for the Trenton Watch Co. in New York, under Mr. J. B. Yates, the agent of the company at that point.

—Foreman Wills, of the Waltham watch factory, has just completed another one of his crystal exhibition watches. It is a four size, and like Mr. Wills' last production of this kind, has plates and case of crystal. Those who have seen it, pronounce it a fine piece of horological mechanism.

—The agent of the new jewelers' building, now in course of construction at Broadway and John street, reports that already more than one-half of it has been rented, and he expects to have the remainder let long before the completion of the building. Each floor is to be finished interiorly very shortly after the outside walls are up.

—The Jewelers' Circular Publishing Co. has had several orders for "Excelsior's Treatise on the Balance Spring," which cannot be filled because the entire edition of the book has been sold. Any of our readers who have copies of the book which they are willing to sell, should communicate with us, mentioning the price and condition of the book.

—Mr. William F. Boetcher has bought out the business of the late firm of Spooner & Welch, 85 Myrtle avenue, Brooklyn, where he had been for six or seven years as clerk. Upon the death of Mr. Welch, recently, Mr. Spooner decided to retire, and the sale to Mr. Boetcher was consummated October 22d. The firm of Spooner & Welch started business in 1850.

—The R. Wallace & Sons Mfg. Co. has recently put upon the market a new pattern in solid silver, called the "Saint Leon." It is shown in ice cream sets, fancy pieces and sets of all kinds. The design is a floral pattern in *repoussé* work, oxidized. It has been pronounced a success by many who have seen it, and is quite as handsome as any that have appeared this fall.

—The Crescent Watch Case Co. have begun the publication of a circular called the "Crescent Bulletin," which will be issued from time to time. It will contain excellent wood-cut illustrations of the new styles of cases made by the company. Dealers can have this circular sent to them regularly by sending their names for that purpose to Robbins & Appleton, who will also supply them with electrotypes for local advertising.

—A daring robbery in broad daylight occurred in Boston, on October 17th. Mr. W. M. Maynard, the owner of a jewelry store and loan office at 16 Brattle square, had his place robbed of \$1,200 worth of goods. While he was at dinner, two men, dressed as laborers, came to his store, and after covering the windows with whitening, entered the store by means of a step-ladder and through a transom above the door. Beside fifty gold watches and seventy-five silver ones, a lot of chains and diamond rings were taken. Mr. Maynard estimates the value of the stolen property between \$1,200 and \$1,500.

—The annual dinner of the New York Jewelers' Association will be held at Delmonico's on the night of November 15th. The invited guests of the association are the Rev. E. Walpole Warren, Thomas N. McCarter, of Newark, ex-Judge Noah Davis, Seth W. Hale, Gen. William T. Sherman, Charles H. Hall, D.D., Chauncey M. Depew, Isaac H. Bailey, Charles L. Tiffany, Frank Hopkinson Smith, Daniel Dougherty, Hon. O. H. Platt, Gen. Horace Porter, Elihu Root, Roger A. Pryor and Abram S. Hewitt, Mayor of New York city. Up to October 22d acceptances had been received by the secretary from the six first-named gentlemen.

—There has just been added to our list of valuable instruction books, the latest edition of Saunier's Watchmakers' Handbook, translated by Julien Trippin and Edward Rigg, M. A. This edition of this most valuable book for young and old watchmakers, contains many improvements over the previous edition, is larger and is sold at a lower price. It can be had post paid for \$3.50. The new edition contains numerous wood-cut illustrations, fourteen large copper-plate engravings, a very complete index and over 500 pages of important instruction in the watchmakers' art. It is substantially bound and carefully printed.

—Mr. Charles M. Piccard, of Dayton, Ohio, made an assignment early last month, and the Sheriff was placed in possession of his stock. Soon after, on October 14th, some of his creditors brought replevin suits, and tried to recover some diamonds from the possession of the Sheriff, who at first resisted, but afterwards allowed the safe to be opened, but the diamonds could not be found. As report has it that there are only two persons who knew the combination of the safe, the offender should quickly be discovered. The affair has made quite a sensation. Neither Mr. Piccard nor the Sheriff's deputy know where the missing diamonds are. The police are making an investigation.

Charles W. Schnell, the diamond broker, who recently absconded with a large amount of precious stones, with which he went to Canada, whence he was captured and sent to New York for trial, was condemned to five years' imprisonment. Some of his victims will recover part of their goods.

—Mr. August Morck, Jr., of Morck Bros., Warren, Pa., who is an optician of some note in his locality, has recently published a book entitled, "Preservation and Care of the Human Eye." It contains many practical hints written in a very readable style, on the care of the eye, and it proves Mr. Morck to be well versed in his profession. He is a pupil of Dr. Bucklin.

—Mr. W. E. Cross, watchmaker, with A. R. Vanderbilt, Amsterdam, N. Y., has a curious old watch he is repairing. It is 278 years old, has a fusee movement; the case is of porcelain, the face being covered with a heavy bulls eye crystal. On the back of the case is a garden scene, in colors, with the figures of a man and woman in foreground. The figures are attired in the costumes of the seventeenth century. The watch is the property of an Amsterdam coal dealer, and has been in the family for many generations. The owner has had some difficulty in getting the timepiece repaired, and it has not run in thirty-seven years. It is now clipping along fairly well. It is quite a curiosity.

—Albert Berger & Co., manufacturers of the W. B. & Co. watch glasses, report a largely increased trade this season, which may be partly attributed to the care this house takes, not only to sustain the quality of their goods, but to constantly improve it. A. B. & Co. have this year imported a large stock of improved lenses of a very superior make, interchangeable without trouble to the seller. Each box contains graduated numbers, and if desired they can be had of different colors, so that the jeweler or optician need keep only a small stock to suit his customers. From the very superior quality of these lenses we predict a large sale. From their manufacturing in Alsace and Loraine they have also a fine stock of different qualities of French clocks and bronzes, which for holiday purposes are just the thing our jewelers want.

—The stone importers have secured a reversal of the obnoxious decision recently made by the Treasury Department declaring agates imported in the form of cameos, intaglios, etc., not precious stones within the meaning of the law. The reversal of the decision is dated October 15th, and is the direct result of the enterprise of a few stone importers, notably M. D. Rothschild, Wesley S. Block and others. The new decision declares that agates and varieties of agate designated "cerulean, chalcedony, onyx, sardonyx, jasper, etc., when converted into cameos, or cut and polished and prepared for use as settings for jewelry," are precious stones. The duty upon these stones will therefore be the same as it was before, namely 10 per cent. as upon all precious stones.

—Emil Irlande, a miniature painter, who has made plenty of money recently painting miniatures to be used in fine jewelry, obtained credit on goods early last month to the amount of several thousand dollars from well-known jewelry houses, and then went to Europe in the company of a young girl who had become infatuated with him. Irlande was an artist of ability, and his facility for working out fine miniatures gave him a good livelihood among the first-class jewelers, with whom there is now a lively demand for this kind of jewelry. He is a Frenchman, with the usual suave, polite and gentlemanly characteristics of that race, and easily won the confidence of those with whom he did business. It is said he has several wives in Europe, his remarkably affable manner and handsome face giving him power over the fair sex. His elopement has occasioned some surprise, as his ability as an artist would have earned him enough money in a few months to pay for all the goods he took with him. He left behind him orders for work amounting to many hundred dollars.

—The daily and other newspapers have lately published sensational reports of the robbery of a quantity of loose and mounted diamonds from Stern & Stern, of 6 Maiden Lane. The value of the goods was, in several instances, put at \$14,000. Upon investigation the facts are found to be as follows: I. P. Miller, an employee of the firm, recently stole a quantity of loose diamonds and jewelry from Stern & Stern and pawned them at the Simpsons, on the Bowery. He then fled to Canada, from whence he sent the pawn tickets to Stern & Stern. The value of the goods was about \$5,000, and Miller received \$2,886 from the pawnbrokers. The Pinkerton detectives who were employed by Stern & Stern, shortly afterwards discovered that one of the clerks of the firm named E. Sondheim, was implicated with Miller in the theft, and he was promptly arrested. Upon his arrest the goods were turned over by the pawnbrokers as required by law to the property clerk of the court. Sondheim was indicted by the Grand Jury on October 24, and Stern & Stern will probably recover their goods soon.

—De Jones had been out the evening before and was rather nervous when putting on his shirt in the morning. In fumbling with his shirt collar he dropped the collar button, and in a blind search for its recovery stepped on it with his heavy shoes, smashing it into a flat and shapeless mass of metal. That morning he went into Smith's jewelry store to have the button mended, and was surprised to receive from Mr. Smith a new button in exchange for the old without charge. "What an old fool Smith the jeweler is," he remarked to a friend later in the day, explaining the occurrence. But Smith is not a fool. It seems that he uses the "one-piece" collar button made by Krementz & Co., who have made a rule to exchange all their collar buttons which may become broken from any cause for brand new ones. While many a jeweler would rather repair collar buttons at a profit of 25 or 50 cents on the job, the plan of a free exchange is much better, for it acts as a most successful advertisement. De Jones may say that Smith is a fool, but whenever he wants jewelry he will be sure to look at Smith's stock first. The Krementz button will be exchanged for a new one, even if its owner carelessly let a train of cars run over it.

—The Prentiss Calendar & Time Co. of New York, is a new corporation, formed for the purpose of making and renting automatic calendar-attachments for clocks. The principle of this calendar-attachment is an ingenious one, and being a useful contrivance the company are confident there will be a great demand for it. A calendar showing the day, month and year, is attached by means of an electric connection to any clock, either in the clock case or in any other part of the room. One or more calendars can be attached to the clock, and in a bank, for instance, each clerk may have a calendar on his desk, moved by the same electric power. The calendar is made large enough to be seen at a distance of 300 feet, and will run as well for ten years as for one. Among those who have taken stock in the new venture are the following named members of the trade: L. A. Parsons, Henry Hayes, Joseph B. Bowden, M. L. Bowden, C. A. Fowler, George M. Bacon, of Bates & Bacon, and Flavius J. Allen, of the Astor House. The officers of the company are L. W. Sweet, of the Cheshire Watch Co., president; Paul M. Richards, vice-president; Henry S. Prentiss, patentee, secretary, and Charles A. Fowler, treasurer. Directors, L. W. Sweet, L. A. Parsons, Henry Hayes, George W. Shiebler, George M. Bacon, Joseph B. Bowden, Joseph L. Porter, of Porter Bros. & Co.; Paul M. Richards, New York *Observer*; Henry S. Prentiss. The company is all organized and ready for business.

—Among the most attractive show windows in the Lane recently was that of E. A. Thrall. In one window a central square of white material contained some beautiful examples of enameled jewelry, embracing many novel forms; surrounding this was a variety of valuable stone jewelry, lace pins, brooches, ear rings, etc., and some exquisite watches, lady's size. One of these was an oval case, the back of which was one mass of pearls set in the case; another was similarly set with diamonds and rubies. The window had a very rich appearance, the goods being artistically arranged and showing to good advantage. In the other window a square center, composed of chains, locket, badges, etc., was surrounded by rows of gold watches of various sizes, the cases presenting a great variety of designs. The arrangement was attractive, and many persons gathered about to admire them. Mr. Thrall has at present one of the largest stocks of American watches in the city, both ladies' and gentlemen's sizes, and the designs in cases seem to be without limit. Mr. Thrall is also doing a large business in precious stones, set and unset, having a liberal supply of diamonds, pearls, rubies, etc., for the trade. The house is an enterprising one and has made remarkable progress in the past few years. It has a good location, is attractive inside and out, and by keeping the goods that are in demand, they manage to catch their full share of trade.

TO PRESERVE WORKING DESIGNS.—Manufacturers who use working designs and wish to preserve them, will be benefitted greatly by following a plan which has long been found useful by Mr. Gilbert T. Woglom. A design on clean white paper soon becomes unfit for use after a short period of handling in a workshop, and to those who use the same design more than once, Mr. Woglom's plan is a good one: Take a quantity of alcohol equal to 95 per cent. of the entire solution, and dissolve in it some ordinary orange shellac. This makes a free-flowing solution which should be applied to the surface upon which the design is drawn, not with a brush, which is apt to blur a pencil drawing, but in the same manner that a photographer flows his solution on a glass plate. The varnished surface stands great wear and the design will always remain clear. When the surface becomes dirty it can easily be rubbed off without injury to the design.



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THE JEWELERS' CIRCULAR

AND

HOROLOGICAL REVIEW.

OFFICIAL REPRESENTATIVE OF THE JEWELERS' LEAGUE, THE NEW YORK JEWELERS' BOARD OF TRADE, AND THE JEWELERS' SECURITY ALLIANCE.

It is also the Recognized Exponent of Trade Interests.

A MONTHLY JOURNAL DEVOTED TO THE INTERESTS OF WATCHMAKERS JEWELERS, SILVERSMITHS, ELECTRO-PLATE MANUFACTURERS, AND THOSE ENGAGED IN THE KINDRED BRANCHES OF ART INDUSTRY.

SUBSCRIPTION.—To all parts of the United States and Canada, \$2.00 per Annum, Postage Paid. To all Foreign Countries, \$3.00 per Annum, Prepaid.

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A full Index to Advertisements and Table of Contents will be found on Page 5 of this issue.

WITH THE approach of the holiday season comes the arch-enemy of the retail jeweler—the burglar and the sneak thief. For our friend, the jeweler, the contemplation of increased sales and holiday delights is alloyed with the constant fear of robbery. Like Argus, he ought to have a hundred eyes. What with waiting on customers, playing the detective at the same time, and keeping an eye, nervously, on his window, in the expectation that some desperate tramp will hurl a stone through it and make off with his holiday display, he is busy indeed. Such being the dangers to which he is exposed, then, what can he do to fortify himself against them? Gratings or nettings may protect the window, though at the sacrifice of much of its effect; a certificate in the Security Alliance strikes terror to the safe-breaker's heart, but no labor—or rather worry-saving devices—can take the place of constant watchfulness in dealing with the sneak and confidence man. The tricks of these sharpers are as changeable as the colors of the kaleidoscope. A ruse of to-day may be varied or discarded entirely to-morrow. The dealer must familiarize himself with these. By reading the trade papers carefully he can keep himself informed of the whereabouts of the best known crooks and their latest schemes. He can also see that his

clerks make good use of the journals, and caution them frequently to be attentive when waiting on customers. The salesman ought to secretly suspect every stranger. It is his only safeguard. With due care and vigilance losses from this source can be prevented entirely, or narrowed down to a minimum. Thanks to increased vigilance and energy in prosecution, a few of the harpies that preyed upon the trade have been put out of harm's way for a time at least, but this should not encourage a false feeling of security. Eternal vigilance is the price, not only of liberty, but of immunity from robbery.

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A CANADIAN commission is reported to be at Buenos Ayres engaged in establishing a steamship line between that port and Quebec, the Canadian government having voted a subsidy for that purpose. This example will doubtless be followed ere long by our own government, which certainly has as large interests to foster in South America as the Dominion of Canada has. Our manufacturers are beginning to cast their eyes longingly toward the great continent south of us, with which, from advantages of position and skill in the mechanic arts, we ought to be doing a lucrative trade.

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IT WAS with some surprise that we saw reprinted by one of our contemporaries, an item from a Washington paper on the infrequency of "Jewelry among our Lawmakers." Whether our august legislators at Washington are less fond of personal adornment than other mortals, we do not know, but from the abundant evidence they are constantly giving of full kinship to Adam's kind, we are at liberty to doubt it. But irrespective of the truth of the statement, journals which are published in the interest of the jewelry trade ought not to give currency to such generalizations. During the past three years the trade journals have done yeoman's service in the way of popularizing jewelry through the medium of the daily press. Their fashion items and gossip paragraphs have been caught up with a readiness, proving beyond cavil that the Second Adventist aversion to jewelry we once heard so much about is now confined to a very small part of the state of Michigan. In fact the notion that jewelry is unfashionable may be classed among superstitions and illusions that disappear under investigation. Once examine them and they are doomed. The senseless prejudice against so natural and innocent a desire sprung up abroad a number of years back with the sanction of a few fad-makers, and was at once accepted as gospel by willing apes on this side of the water. Like all of Fashion's fads, that have no basis in reason and common sense, however, its sway was of short duration. Most of her deluded followers went to the nearest jewelry store as soon as they had returned to consciousness and asked themselves the simple question: Why? Man's natural taste for personal ornament again asserts itself. Why, then, should we attempt to turn back the hand on the dial of progress? In the

interest of the trade it is to be hoped no further indiscretions of this kind will occur to break the good record the jewelry journals have made in combatting this evil. By all means let us continue to "prick the bubbles of humbug and of fraud," instead of lending official sanction to the stray paragraphs of 'fad-mongers, who, too often, seek to create sensations at whatever cost, and have so dangerous a faculty of drawing general conclusions from single instances.

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IT SEEMS scarcely necessary to add the weight of another decision of the Supreme Court to the already overwhelming mass of opinions against the Drummers' Tax. Yet Justice Bradley is again called upon to teach us our A. B. C.'s. Last fall, it will be remembered, a traveler for a Kansas City tea house was arrested in one of the principal cities of Texas for refusing to pay this obnoxious tax, which at that time was still levied by a few of the municipalities of Texas. His house, with whom he immediately advised, directed him to fight it out, and he did, with the result that the state won a victory before the local United States Court. The case, however, was then appealed to the Supreme Court. This august body has just rendered a decision that ought to lay this ghostly heresy of the Drummers' Tax to sleep forever. As several decisions on similar suits arising in other States had already been given, the result of the appeal was virtually a foregone conclusion. Now the Ossa of legal verdict has been piled upon the Pelion of popular opinion, and the force of reason and precedent, too, for that matter, "can no farther go." The only wonder is that so plain a violation of the very letter of the constitution was allowed to exist so long. The constitution is very clear in prohibiting all restriction upon interstate commerce, which the Drummers' Tax certainly is or was, for we are writing its obituary. The whole history of this litigation only goes to prove how constant must be our vigilance if we are to prevent the growth under our very eyes of institutions and customs in direct violation of our charter of liberty, and how many of our legislators and civic functionaries seem not to have read or understood that instrument. We reverence but do not study those glorious vouchers of our rights. The Constitution and the Declaration of Independence ought to be so instilled into the minds of our children that no pronouncement of the Supreme Court would be needed to remind the people that we are entitled to free trade between the States of our Union.

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AMERICAN watch manufacturers will look with peculiar interest on the showing the Swiss manufacturers are going to make at the Paris International Exhibition next year. The two rival methods of machine and hand work have both received great impetus in Switzerland during the past few years. Though American competition has put the Swiss on their mettle and obliged them to introduce improvements in all branches of the craft, there still remain two distinct methods of manufacture. The French-speaking population are generally bound to the hand system, and all their progress has been along the line of perfecting the watchmaker, while, to a great extent, the American machine system has been adopted by the German-speaking cantons. Hence it will be seen that something of the bitterness of race feeling enters into this rivalry, and the exhibits are pretty sure on that account to give a good test of the merits of each method. From a general point of view, it must be admitted that while machinery has vastly cheapened the cost of production, and, at the same time, preserved a good degree of accuracy in the essential qualities of a timepiece, the part the skilled watchmaker plays in the perfecting of fine watches has not and probably cannot be filled by any labor-saving device. Both methods have produced good results; the one by affording a serviceable article at a low price, and the other by attaining to a grade of excellence nearly, if not quite, commensurate with the higher price a more expensive process

entails. The contestants are well matched and eager for a chance to show their strength. It will be indeed a battle of the giants. So far as the American manufacturer is concerned, he can well afford to stand by and act as judge of the trial, not neglecting meanwhile to profit by all the opportunities for comparison that a neutral position in the midst of such intense rivalry will surely afford him.

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THE Canadian correspondent of one of our contemporaries says in a recent letter that the jewelry trade of Canada are of the opinion that the President's policy of retaliation, if carried out, would benefit Canada and injure the United States. So astonishing is this assertion, we would fain hope that "the trade" might be more correctly expressed by the pronoun of the first person singular. Embargoes are two-edged weapons. They have always been considered extreme and offensive measures, and history abounds with examples to show that all parties interested have suffered by them. The doctrine that non-intercourse can be beneficial to anybody, indeed, has a Malthusian flavor about it that offends common sense and challenges investigation. Trade has been going on between the United States and Canada increasingly for years. The French and English manufacturers who formerly held that market, including the manufacturers of watches, clocks and the cheaper grades of jewelry, have gradually been losing their grip. Now, why have the Canadians abandoned the foreign manufacturers to whom they were bound by ties of consanguinity and religious and political affiliation, and sought the satisfaction of many of their wants nearer at home, in the United States? Will they deny that it was because they found it to their advantage so to do? Are not their proximity to us and the climatic influences under which they live so far assimilating them to us that they find our ideas and our styles better suited to their tastes than those of the old world? Self stultification is the only alternative. For to tell a man that an exchange of commodities he has been voluntarily making for years has not been to his advantage is equivalent to calling him a fool, and while in rare instances such language may be deserved, the indiscriminate application of it must sorely strain the patriotism of our northern neighbors. Non-intercourse would benefit them and injure us! If non-intercourse would be beneficial, intercourse is now detrimental. All these years, then, Canada has been trading with us in a spirit of perversity and self-abnegation, and not for material advantage at all. Is Canada coquetting with commerce? Like a sixteen year old school girl has she had a tiff with the mother country and all the other eminently respectable countries that were courting her trade, and "cutting" them forthwith made friends with this great overgrown, ill-favored suitor across the border, just to spite our rivals? O, inconsistency of men! Our merchants are frank enough to admit that the trade is profitable and they want to continue it. Does Canada prefer cheap patriotism to cheap goods?

A cessation of trade between these two neighbors, he adds, would give "encouragement" to Canadian industry. "Canada would fall back upon her own resources; she would learn to stand upon her own feet." A beleaguered city is "thrown on its own resources," as was Robinson Crusoe on his lone island. During the blizzard New York was "thrown on its own resources," and it never discovered until that time how very limited those resources are. But if it would encourage Canadian industry to cease trading with us, in the name of common sense why wait for retaliation? Why not begin now to discourage this wasteful commerce which it seems is maintained for sentimental or benevolent reasons? Is any action of the President needed to teach the Canadian people to satisfy their wants with the least possible effort? "Retaliation," we are told, "could only operate to throw the trade bodily into European markets." That is, so long as there is any possible means of supplying the demand no harm is done by cutting off the usual and natural source of supply. Because the Canadians would not be starved to death by retaliation

therefore retaliation would not injure them. This logic is charming in its simplicity. Between non-intercourse and free intercourse, between plenty and death by starvation, there are many degrees of loss and privation, but loss and privation none the less. The grotesque absurdity of such reasoning recalls the story of the Irishman that tried to teach his horse to get along without eating. The poor animal was no sooner well broke in than it unfortunately died, a martyr to its owner's stupidity. The European markets to-day stand open to receive all the trade that Canada has to offer. Why not "throw the trade bodily" into those markets now if that is desirable?

Arguments of th's sort savor of the spirit of those Indian devotees who think that by mortifying the flesh, by perverting and thwarting every natural and innocent desire they are pleasing their god, whereas they must be displeasing any possible god that reason can frame. It is hard to be bothered with bad neighbors, and to be consistent Canada ought to pray that some internal convulsion of the earth will enable her to detach herself from the rest of the North American continent, float off into space and anchor there far away from these pestiferous neighbors of hers that menace her with goods she wants and is willing to pay for.

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THE physical examination of applicants for membership in the Jewelers' and Tradesmen's Company has led to an interesting discovery, which for humanity's sake ought immediately to be brought to the notice of the trade. The physician who makes the examinations found among old jewelry salesmen a tendency to weakness of the kidneys, which he was at first unable to account for. Further investigation convinced him that the cause of this weakness was none other than the prevalent habit of carrying overloaded sample boxes, some of which are little else than single-handed trunks, weighing as high as 50 or 60 pounds. Experts concurred with his view, the number of cases found seeming sufficient to establish the precedent beyond a doubt. Such a heavy weight carried in one hand pulls the upper part of the body out of the perpendicular and pushes the lower ribs in against the kidney so as seriously to interfere with the functions of that delicate organ. A few years of this dray horse work is apt to cause permanent injury, predisposing the salesman to diabetes or Bright's disease. The desire to have all his styles represented in the sample case is as natural for the manufacturer as the willingness to do porter's work is commendable in the salesman. But in the face of such a startling announcement as this, any further sacrifice of life and health on the altar of competition becomes foolhardy and should be discouraged by employers. The difficulty might be obviated by reducing the number of samples necessary for the salesman to carry, or, if that is not advisable, by dividing them up and making two cases. The expense of providing an additional case is surely not great when the object is considered. At any rate there will be no excuse hereafter for disregarding the timely warning of the Jewelers' and Tradesmen's Company.

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AMONG the important questions before the American people to-day, questions which are pressing for an answer, is that of immigration. For years we have prided ourselves on being the Good Samaritan of nations. We have stretched out our arms to the poor and the oppressed of all lands, beckoning them hither to this promised land of ours flowing with milk and honey, where, as by the Midas-touch, paupers are miraculously transformed into millionaires in a generation. In the early days of the Republic when the field for enterprise was almost boundless and laborers were few, able-bodied immigrants of all nationalities were welcomed by the settlers. America was hospitable then and never thought of such a thing as turning away a stranger from her doors. The newcomers could find

plenty of work at good wages and plenty of room to grow in. They took kindly to our language and customs, and being much fewer in numbers as compared with our present foreign population, they were quickly assimilated with the primitive stock. The second generation of these immigrants generally became truly American. By the exercise of economy, to which the privations of the old world had inured them, they prospered, grew rich, and many of them took their places among the honored and influential of the land. This admixture and engrafting of races, it is admitted, has been one of the chief sources of our strength and intensity as a nation.

But so incessantly has the stream of immigration been pouring in upon us year in and year out, that the American stomach is now suffering from acute dyspepsia caused by overindulgence in European pauper labor, and nearly all the social diagnosticians tell us that a more sparing use of this foreign delicacy hereafter is absolutely necessary to restore us to health. Speculative appropriation has made land scarcer and higher, and more capital is needed to set men to work than before. Many of these "Latter Day Saints" that now seek "Freedom's cradle in the West," particularly the Irish and Italians, are quite different from the Puritan fathers. They have a fondness for the amenities of city life and a disinclination to work that totally incapacitates them for the farmer's life. So they congregate in our large cities, propagate to swell the taxes and get naturalized to help the political machines appropriate them. Hence our large cities become what Tacitus said Rome was—places where everything dangerous and of evil omen collects and holds high carnival. Is it any wonder that under these circumstances the students of sociology should warn us that the dangers now threatening our republic lurk in the slums of Mott and Baxter streets? The remedy advised by the physicians must be applied. We must take only such nutriment into the body politic as can be assimilated. This big sea-board door of ours has been wide open long enough, and before letting any more strangers in we had better station somebody there to find out whether they are worthy of our hospitality.

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THE NOTABLE feature of the Jewelers' dinner is the good fellowship exhibited by all. It is an occasion when all come together on a footing of equality; all business cares are laid aside temporarily, and employers and employed, dealers and customers, debtor and creditor, the rich and the poor, fraternize in the most friendly spirit, stretch their legs under the same table, laugh at the same stories, fill their glasses from the same bottle, and enjoy the banquet in the same spirit of sociability and amity. "The shop" is left in the background, and the social element is brought to the front. Every man there appears at his best, for the better side of his nature is appealed to, and the spirit of goodfellowship has full sway. The speakers are selected because of their special faculty to entertain, and the brilliant surroundings of the Jewelers' dinner puts them in the best of humor, and they bubble and sparkle with wit and pleasantry. To those who are fortunate enough to be present, the Jewelers' dinner is an event to be remembered, breaking the humdrum monotony of their busy lives, bringing them out of themselves, and is as grateful to them as an oasis in the desert. It is to be regretted that they do not come oftener. Such a gathering once in three months would be none too frequent, and would be appreciated by all who had the good fortune to attend.

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A MAIDEN LANE dealer, speaking of the election, said that the recent campaign had disastrously affected business for two months. He complained that business men seemed to go wild during the canvass and to think of little else than politics. He maintained that the remedy for this was to have the presidential election but once in six years; then to immediately kill all the defeated can-

didates, and when the successful one has finished his term of office, lead him also to the sacrifice, thus making him ineligible to re-election. He would kill off the defeated candidates for the reason, as he explained, that they become soreheaded over their defeat, and are thereafter a pestilential element in our politics. While there is much truth in his assertion, we fear there is little hope that his sanguinary remedy will ever be adopted. Blood-letting as a cure-all for disease, physical or political, is out of fashion in the present state of civilization.

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SINCE THE CIRCULAR started the subject of window dressing a notable improvement in the arrangement of goods in show windows has taken place in the stores of this city. Where disorder and carelessness formerly prevailed, care and thought have been brought into service, and artistic exhibitions are found where a hodge-podge medley formerly reigned. If our words have produced as marked an effect in other places as they have here, our labor has not been in vain. We stopped recently to compliment a dealer on the attractiveness of his show window, when he remarked: "We didn't use to think it worth while to bother about the show windows, but chucked into them promiscuously such samples of stock as came handy, often using shop-worn goods for that purpose. But THE CIRCULAR stirred up the ambition of my young men, and now three of them claim to be experts in window dressing. They have charge of the work week about, and each strives to excel the other in their artistic arrangement, thinking about it during his off weeks, and studying how best to do it. I used at first to scold them for wasting their time over it, but I soon perceived that people began to stop to look at the goods, and from that they would drop in to make inquiries, and, as we make it a point to be polite to everybody, we have secured a good many permanent customers in this way. Now, instead of scolding the boys for wasting time, I have offered a prize of \$10.00 to the one who arranges the windows most attractively during three months. This has put them on their mettle, and as a result, my windows attract a large amount of attention. I find that \$10.00 a good investment." It is certainly a good investment of time and care to make show windows attractive, and will often enable a dealer to work off stock that has become *passé*. A piece or two of jewelry that is out of style judiciously placed among the later fashions, not infrequently find customers. Good taste is always at a premium; and to arrange a show window attractively demands good taste, and necessarily takes some time.

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ACCORDING to the New York *Times*, a communication received by a resident of this city from one of the jurors of the Brussels Exposition, proves that the reputation of American artisans abroad has been fully sustained by the few exhibitors who took part there. The writer says:

"I have just finished the duties of juror at the exposition, and must say of the returns that in the agricultural machines, on which division I served, we received for the United States three diplomas of honor (the highest award) and one gold medal—in other words, a diploma of honor for each exhibitor but one, and he really only deserved the gold medal. The other exhibitors fared equally well, for out of 73, 54 received distinctions of greater or less degree. I think we have reason to congratulate ourselves."

This is encouraging, and should make our manufacturers the more anxious to have a favorable showing at the great Paris Exposition next year. Despite the foolish prejudices of some of the European powers who have refused to take part in the celebration for fear of endorsing the French Revolution, the Exposition will probably be the most memorable of all the memorable enterprises of this kind that France has projected. Our own Congress has appropriated \$250,000 to defray the expenses of the United States Commission, and expressed itself as highly favoring the scheme. General W. B.

Franklin has been appointed Commissioner-General on behalf of the United States, and Mr. Somerville P. Tuck, Assistant Commissioner. Offices have been opened in the Washington Building at the Battery, whence circulars and information are being sent out very freely, and where special inquiries will be promptly and fully answered. In addition to the gentlemen above named, the governor of each state and territory has been invited to appoint a commissioner to co-operate with the government representatives, thus making every section of the country directly interested. In the various exhibition groups provision is made for the display of goldsmiths' and silversmiths' work, art bronzes, watches and clocks, jewelry and precious stones, tools of all kinds, and, in fact, for everything connected with the watch, clock and jewelry industries. It is probable that the industries of this country will be largely represented, as much interest in the event has already been shown. Paris anticipates several millions of visitors next summer on account of the Exposition, and as the steamships will be unusually crowded those anticipating a trip to Europe next year should engage passage very early in the season—at least three months before the proposed date of sailing. No doubt additional steamships will be put on, but most travelers will prefer those that are regularly employed in this traffic. Never have our artisans exhibited their handiwork abroad without receiving distinguished honors and a new incitement to effort, and it is to be hoped that the Centennial Exposition of 1889, commemorating as it will one of the most important political eras of modern times, will not be neglected by the jewelry and kindred trades of this country. Now they need have no fear in coping with the world. Attention is directed to a circular from the Commissioners which is printed under our "Communications."

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THE QUESTION the fashionable world is now so much exercised over—Is Marriage a Failure?—must be answered by every jeweler in the negative. To him marriage is far from being a failure; it is a divinely ordained institution, fraught with all the charms and blessings of heavenly nativity. Hymen is the god of the jeweler, a god whose rites are celebrated by the giving of precious gifts and by universal largess. What St. Nicholas is to the little folks that Hymen is to him, and his daily advice should be but a reiteration of the Divine command in the book of Genesis—"Increase and multiply and replenish the earth."

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OUR Consul General at Berlin, who is convinced of the opportunities which exist in Germany for American manufactures, appeals to our manufacturers to combine and open a permanent exhibition of American specialties in that city. Many trade connections could be formed through such a medium, not only German, but world-wide connections, for many thousands of foreign merchants annually come to the German capital. Of course such an undertaking should be practically carried out and supervised by the most competent men, nor should its promoters hesitate at preliminary expenses.

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THE working of the English Bankruptcy Act does not seem to be satisfactory. Says the *Hardware Trade Journal*, in a review of the report of the Inspector General in Bankruptcy for 1887: "The amount of insolvency recorded in the year, as indicated by the amount of receiving orders made, shows an increase of about ½ per cent.—the numbers being 4,816 in 1886 and 4,839 in 1887. The estimated liabilities increased from £7,913,871 to £8,935,825, or nearly 13 per cent., while, on the other hand, the estimated assets decreased from £2,855,160 to £2,667,162, or nearly 7 per cent. The percentage of assets to liabilities fell accordingly, from 36.1 per

cent. to 29.8 per cent. The total amount of annual loss to creditors in England and Wales through bankruptcy proceedings for 1887 is estimated at £7,114,905, against £5,919,802 in 1886, showing an increase of £1,195,103. The conclusion forced upon us by these figures is that the amount of a debtor's assets in bankruptcy shows a decided tendency to decrease; or, in other words, that the effect of the act is to induce the debtor either to dissipate his whole estate before going into bankruptcy, or enter into arrangements involving fraudulent preferences in the case of certain creditors to the disadvantage of all the rest."

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OPPOSITION to the Chinese exclusion bill is already developing in China. Merchants in San Francisco and New York have been notified that our goods are being extensively boycotted; popular demonstrations against Americans have been frequent and threats of the destruction of the residence of the Chinese Minister at Washington, who failed to vigorously oppose the measure, have been freely made, while the local press in China demands as a retaliatory measure, the exclusion of Americans from the Empire, or even their expulsion and the abrogation of the existing commercial treaties. This would be unfortunate, as our trade with China, since her ports were forcibly opened to the world in 1842, has been profitable to both countries. These retaliatory measures may be very patriotic, but they are a good deal like biting off one's nose to spite one's face.

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GLANCE at the Treasury Department's summary of imports and exports for September, shows a condition of trade little less favorable than prevailed last year. Imports of rough and glazier's diamonds for that month amounted to \$32,464, as compared with \$43,430 last year, though for the nine months of the year 1888 leads by \$4,270. About 21 per cent. more platinum has been imported this year than last. Imports of clocks were recorded to the value of \$59,837 as compared with \$63,499 last September, and for the nine months, \$262,244 as against \$225,935 last year. Of watches, \$163,871 worth were brought in during the month of September, 1888, as compared with \$161,579 last year, the increase for the nine months being about 11 per cent. In the jewelry invoices a still greater increase is seen, amounting for the nine months to over 47 per cent. Nearly 23 per cent. more bronzes manufactures were imported up to October 1 than for the same period of last year. In exports the showing is scarcely less favorable. Exports of clocks amounted to only \$88,289 as against \$103,107 for the same month of 1887, the decrease for the nine months being more than 6 per cent. The watch manufacturers, however, seem to be finding a good market in foreign countries. Their exports for the first three-quarters of 1888 are over 45 per cent. in excess of those for the same period of 1887. The exporters managed to find an outlet for \$48,527 worth of our jewelry manufactures instead of \$31,168, which was all they took last September, though for the nine months there is a slight falling off. September showed a very marked increase in exports of plated ware, \$62,147 as against \$37,767; but here, also, there is a falling off—of 11 per cent.—in the total for the nine months. In general, there is a noticeable falling off this year in our exports of foods and cereals, and an encouraging increase in our exports of machinery, agricultural implements, etc. For the nine months of 1888 the total imports exceeded the total exports by \$89,607,172, while our exports of gold and silver coin and bullion were \$24,568,322 in excess of our imports.

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WE BEGIN in this issue a series of illustrated articles on the Marsfels collection of old watches at Frankfort, Germany. While fragmentary descriptions of ancient timepieces have occasion-

ally found their way into the public prints, this is, we believe, the first opportunity the average watchmaker on this side of the water has had of making a serial study of the watch through the different stages of its development. The copious illustrations which will appear will enable the student to get a thorough understanding of all the most noteworthy features of the collection. Readers of THE CIRCULAR who possess old watches are invited to correspond with us while the series is running, to add to the completeness and interest of the narrative.

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THERE is yet room for novelties in business, says the London *Watchmaker, Jeweler and Silversmith*. In the Rue de Rivoli in Paris a shop has been opened which offers to loan the impecunious money for the purpose of reclaiming articles of jewelry, etc., from pawn, which are to be afterwards offered for sale in their own windows for the joint benefit of both parties concerned.

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THE burden borne by the great copper syndicate seems to be increasing. London copper deliveries for June amounted to only 6,212 tons, yet the visible stocks have now increased to 71,243 tons as against 57,972 tons a year ago, while for the six months the deliveries have fallen off by 17,000 tons as against the first half of 1887, and by 27,000 as against 1886. Notwithstanding this rather unfavorable showing, the announcement comes that the syndicate has renewed its contracts with the leading copper mining companies for a term of ten years. There is evidently no check to the ambition of the trust on account of the accumulation of stocks on hand. Like Alexander they are sighing for more worlds to corner, and unless the new deposits now being opened prove more productive than appears likely, the copper syndicate will reign supreme in spite of protest and opposition. These giant monopolies abroad may take warning, however, from the attitude of the London *Economist* toward the Cheshire Salt Trust, recently formed in Great Britain. That conservative journal reminds the members of the combination of the right of eminent domain vested in the state, and intimates that this residuary power may be invoked to relieve the people from such exactions. The same principle is held by some of our leading dailies to apply to the copper combination in this country. But the long suffering of the American people is proverbial. It is extremely doubtful whether they can be roused from their lethargy enough to resort to so extreme a measure of relief. They rather like to be imposed upon.

Don't be Above Your Business.

MR. GILBERT T. WOGLOM, of 32 John street, relates an anecdote of the late Gorham Thurber, Treasurer of the Gorham Manufacturing Co., which illustrates well the practical, unpretentious nature of the man and teaches a lesson that some business men of this generation ought to learn—not to be above their business. In 1859, Mr. Woglom, then a well-grown lad, was in the employ of Gorham & Co., of Providence, who then had a New York office up stairs at No. 4 Maiden Lane. They were accustomed to receive their invoices of goods from the factory at Providence by express. One afternoon while Mr. Thurber was at the office, there came in a handsome engraved tea set, a special order for Ball, Black & Co., then the leading jewelers of the metropolis. After packing the set carefully in a large clothes basket, as they were wont to do, to prevent abrasion, young Woglom surveyed the basket a moment and then said to his employer: "I don't see how I'm going to get that up to Ball, Black & Co's alone." "Oh, I'll help you up with it," replied Mr. Thurber. Suiting the action to the word, he grasped one of the handles,

motioned to his clerk to take the other, and the two started up Broadway with the big basket between them. The store of Ball, Black & Co. was on Broadway at the corner of Murray street, and was patronized by the most fashionable people in New York. Nothing daunted at the possibility of being seen while engaged in such a menial office, Mr. Thurber entered the store with his clothes basket and deposited it, apparently wholly unconscious of any incongruity in the thing. The fact presented to his mind was that something had to be done; the goods ought to be immediately delivered, and the ordinary porter could not be depended upon to carry the basket so as to avoid injury to the contents. Hence, without hesitation, without a suspicion that it might be beneath his dignity, he took hold of the basket himself. Would the prosperous merchant of to-day be apt to show a like independence and respect for labor, or have we lost some of the simplicity and sterling virtues of our fathers?

Use of Gold and other Metals in Ancient Chiriqui.

BY WILLIAM H. HOLMES.*

Continued from page 68, November, 1888.

GROTESQUE FIGURE.



NOTHER piece collected by Mr. McNeil is outlined in fig. 11. The metal is quite base and the surface has been coated with gold, which is now nearly all rubbed off. The shape is that of a quadruped. The head is completely reversed, and the face has a rather grotesque, not to say satanic, expression. The details are not unlike those of other examples previously given.

The Fish.—The fish was a favorite subject with the ancient nations of South America, and is modeled in clay, woven into fabrics, and worked in metals with

remarkable freedom. It was in great favor in Chiriqui, and must have been of importance in the mythology of the country. It occurs most frequently in pottery, where it is executed in color and modeled in the round. The very grotesque specimen in gold shown in fig. 12 is copied from *Harper's Weekly* of August 6th, 1859, where it forms one of a number of illustrations of these curious ornaments. The paper is by Dr. F. M. Otis, who had just returned from Panama.

The Frog.—The frog appears in the plastic art of Chiriqui more frequently perhaps than any other reptile. Its form is reproduced with much spirit and in greatly varying sizes, degree of elaboration, and style of presentation. It is probable that a number of species are represented. In fig. 13 we have a large, rather plain specimen, now in the National Museum. The body and limbs are concave beneath, the metal being about one-sixteenth of an inch thick. The teeth are suggested by a number of perforations; encircling the jaws and the eyes are minute hawk bells containing pellets of metal. The legs are placed in characteristic positions, and the hind feet are broad plates without indications of toes, a characteristic of these golden frogs. The framework or foundation is of copper, apparently nearly pure, and the surface is plated with thin sheet gold, which tends to flake off as the copper foundation corrodes.

The minute delicately-finished example given in fig. 14 contrasts

strongly with the preceding. It is also of base metal plated with pure gold, and belongs to the collection of Mr. Stearns.

The Alligator.—The alligator, which appears so frequently in the pottery of Chiriqui, is only occasionally found in gold. A graphic specimen, illustrated in *Harper's Weekly* of August 6th, 1859, is given in fig. 15. A similar piece formed of base metal is in the collection of Mr. Stearns.

The Crayfish (?).—In fig. 16 we have a fine specimen intended



Fig. 11. Quadruped with grotesque face, in base metal.

apparently to represent a crayfish or some similar crustacean form. The head is supplied with complicated yet graceful antennæ-like appendages, made of wire, neatly coiled and welded together by pressure or hammering. The eyes are globular and are encircled by the ends of a double loop of wire which extends along the back and incloses a line of minute balls or nodes. The peculiar wings and tail will be best understood by referring to the illustration. The foundation metal is much corroded, being dark and rotten, and the plating of reddish gold seems to have been coated with a thin film of yellow gold. The profile view gives a good idea of the thickness of the metal and of the relief of the parts. Two rings or loops of doubled wire are attached to the extreme end of the nose and a heavy ring for suspending is fixed to the under side of the head.

Miscellaneous.—Gold, pure and in the usual alloys, was also used in the manufacture of other articles, such as bells, beads, disks, balls, rings, whistles, thimble-shaped objects, and amulets of varied shapes. Bells are more generally made of bronze because, perhaps, of its greater degree of resonance. Thin plates or, rather, circular sheets, of gold leaf are numerous. One mentioned by Bollaert was $7\frac{1}{4}$ inches in diameter. They are plain or crimped about the margins, indented in various ways, and sometimes perforated, apparently for suspension or attachment. Merritt mentions examples having holes which showed evidences of wear upon one side only, indicating attachment in a fixed position to some object or to some part of the



Fig. 12. Figure of a fish, published by F. M. Otis in Harper's Weekly.

costume. But one example is at hand, a thin sheet, 3 inches in diameter, and crimped or indented neatly about the margin. Its thickness is about that of ordinary tin foil.

USE OF BRONZE.

Bells.—Bells were in pretty general use by the more cultured American races previous to the conquest. The form best known is

* The right to reprint this article has been kindly given us by Dr. W. H. Holmes, of the Bureau of Ethnology, Washington, D. C.

the hawk bell, or common sleigh bell of the North. The globular body is suspended by a loop at the top and is slit on the under side, so that the tinkling of the small free pellets of metal may be audible. Such bells are found in considerable numbers in the graves of Chiriqui, although I have no positive assurance that any of the examples in my possession were actually taken from graves which contained

have been recovered from the tombs and are now to be found in the collections of America and Europe.

A specimen found many years ago on the Rio Grande, near Panama, and figured in *Harper's Weekly*, was of gold and showed specific variations from the Chiriquian pieces. It will be seen by reference to the outline given in fig. 19 that three very neatly shaped

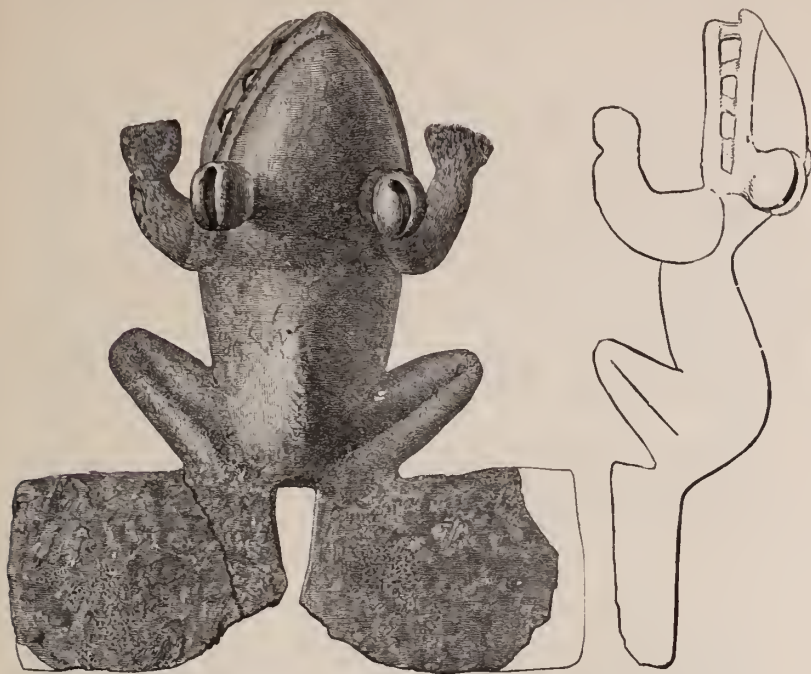


Fig. 13. Large figure of a frog, in base metal plated with gold.

typical Chiriquian relics of other classes. The specimens now in the National Museum, fig. 17, are in most cases, if not in all, of bronze, as demonstrated by Mr. R. B. Riggs, of the chemical laboratory of the United States Geological Survey. All have been cast in molds. In most cases there are traces of a plating of gold. The largest is $1\frac{1}{4}$ inches in height and three-fourths of an inch in diam-



Fig. 14. Small figure of a frog, in base metal plated with gold.

eter. It is surmounted by the rude figure of an animal, through or beneath the body of which is an opening for the attachment of a cord. Others have simple loops at the top. A number of examples are illustrated in fig. 17. The additional piece given in fig. 18 is unique in conception. It represents a human head which takes an inverted position when the bell is suspended. The lower part of the

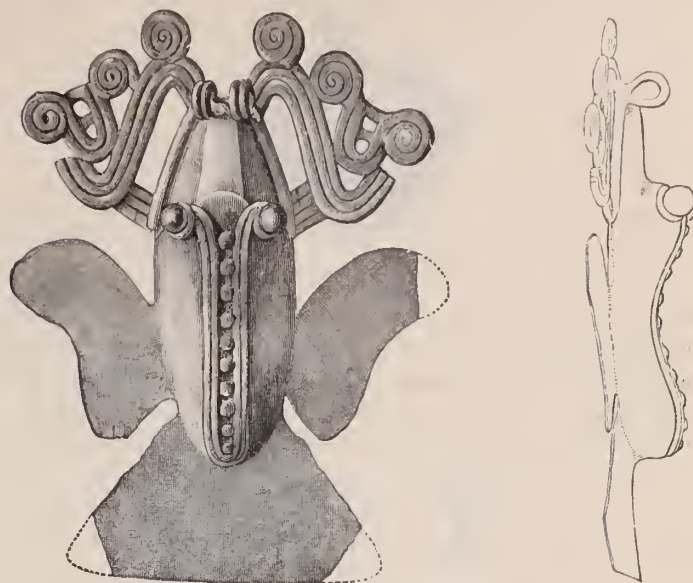


Fig. 16. Animal figure, in base metal plated with gold.

and gracefully ornamented bells are mounted upon a circular plate, to which a short handle is attached. It was evidently not intended for suspension, but rather to be held in the hand as a rattle.

A question as to the authenticity of these bells as aboriginal works very naturally arises, and it may be difficult to show to the satisfaction of the skeptical mind that any particular specimen is not of

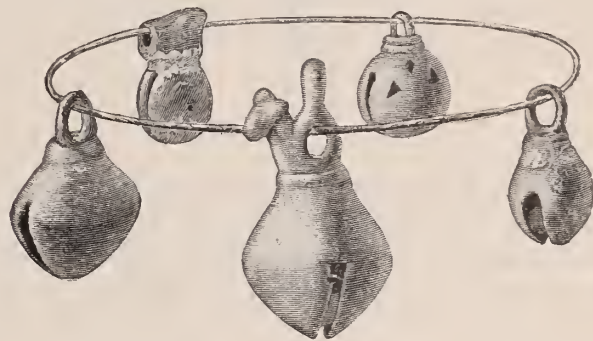


Fig. 17. Bronze Bells, plated or washed with gold.

European origin or inspiration. At the same time we are not without strong proofs that such bells were in use by the Americans before the advent of the whites. Historical accounts are not wanting, but I shall only stop to point out some of the internal evidences of the

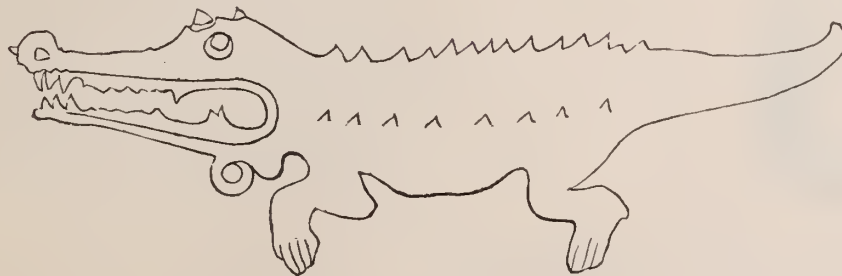


Fig. 15. Figure of an alligator, published by F. M. Otis in *Harper's Weekly*.

bell forms a conical crown to the head and the ring of suspension is attached to the chin. Double coils of wire take the place of the ears, and the other features are formed by setting on bits of the material used in modeling. This specimen belongs to the collection of Mr. Stearns. Many examples of more elaborate workmanship

native art. The strongest argument is to be found in the presence of analogous features in other branches of the art and in other arts. The eyes of the golden figures of reptiles are in many cases minute hawk bells, and in works of clay, the purely aboriginal character of which has not been called in question, similar features are discovered.

The American origin of the bell is not, therefore, to be questioned. The form originated, no doubt, in the rattle, at first a nut shell or a gourd; later it was modeled in clay, and in time the same idea was worked out in the legs and ornaments of vessels and in the heads and other parts of life forms, which were made hollow and supplied



Fig. 18. Bronze Bell with human features.

with tinkling pellets. With the acknowledged skill of these people in the working of metals, there is no reason why the bells described should not have been manufactured independently of European aid and influence.

It should be observed that if these early American bells were

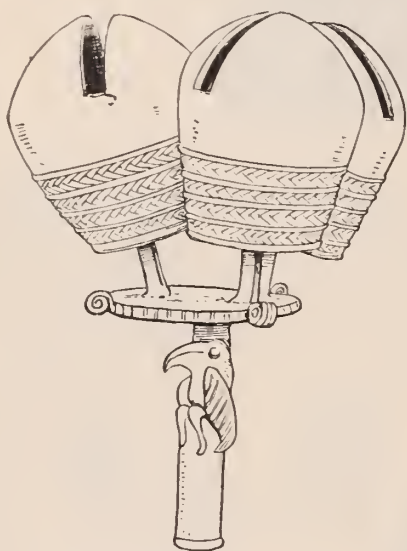


Fig. 19. Triple Bell or Rattle, found on the Rio Grande.

copied from or based upon Spanish originals they would not probably vary greatly in type with the various sections from which they are recovered, but it is observed that marked and persistent differences do occur. The well-known Mexican bell, an example of

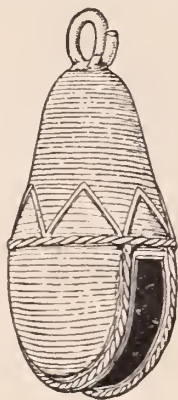


Fig. 20. Example of Ancient Mexican Bell.

which is outlined in fig. 20, although of bronze, is generically distinct in form and construction.

RÉSUMÉ.

In a brief review I may recall the more salient points regarding the use of metals in ancient Chiriqui. Gold, silver, copper, and tin are represented.

Gold and copper were very plentifully distributed among the Isth-

mian races, but we have little information upon the sources of supply. Free gold is found in the stream beds of many localities, and copper was probably found in its native state in some convenient locality; yet it is not impossible that these metals were transported from distant regions, as there must have been considerable intercourse between the inhabitants of Chiriqui and those of Grenada on the south and of Central America on the north. Silver and tin are found in alloys with gold and copper, but not as independent metals. The silver-gold alloy is probably a natural compound. In no case have I found silver to exceed 6 per cent. of the composite metal. Tin was artificially alloyed with copper, forming bronze. The latter metal resembles our ordinary bronze in color and hardness, but I am unable to secure more than a qualitative analysis on account of the scarcity of specimens available for the purpose. We have no information in regard to the origin of the tin. It is not found in a native state, and since it seems hardly probable that the Chiriquians understood smelting ores we are left in doubt as to whether it was obtained from more cultured nations to the north or south or from Europeans. The gold-copper alloys appear to range from pure gold to pure copper.

The great majority of objects were formed by casting in molds. Hammering was but little practised, excepting, apparently, in the formation of sheet gold, which was probably an indigenous product. *Repoussé* work is not found, save as in the crimping and indenting of gold leaf. Engraving and carving were not practiced. It may be considered certain that gilding, or at least plating, was understood.

The objects are obtained from ancient graves, of which no record or reliable tradition is preserved. They are all ornaments, no coin, weapon, tool, or utensil having come to my notice. The absence of utensils and of hammered objects of any kind strikes me as being rather extraordinary, since it is popularly supposed that hammering should, in the normal succession of events, precede casting, and that utensils should be made before elaborate ornaments.

The work exhibits close analogies with that of the mainland of South America, but these analogies appear to be in material, treatment, and scope of employment rather than in the subject matter of the conceptions. The personages and zoö-morphic characters represented are characteristically Chiriquian, and were derived, no doubt, from the mythology of the locality. These works affiliate with the various works in stone and clay, the art products of the province thus constituting a fairly homogeneous whole, and being entirely free from traces of European influence.

Metals do not come into use early in the history of a race, as they are not found in shapes or conditions suitable for immediate use, nor are they when found sufficiently showy to be especially desirable for ornaments. A long period must have elapsed before the use of metals was discovered at all and a longer period passed by before they were worked, and, in the light of our knowledge of the ancient tribes of the United States, it would seem that a considerable degree of culture may be achieved before the casting of metals is understood; but in the ordinary course of progress the discovery of methods of alloying rare metals would be far separated from that of the simple fusing and casting of a single metal, such as gold. The Chiriquian peoples not only had a knowledge of the methods of alloying gold with copper and apparently copper with tin, but, if our data are correct, they were able to plate the baser metals and alloys with sheet gold, and, what is far more wonderful, to wash them with gold, producing an effect identical with that of our galvanic processes.

The character of the conceptions embodied in the art unite with evidences of technical skill to prove to us that American culture, as represented by the ornaments of Chiriqui, was not the product of a day, but of long periods of experiment and progress.

The sum of the art achievements of these peoples indicates perhaps a somewhat lower degree of culture than that attained by the Mexicans and the Peruvians, the ceramic art alone challenging the world in respect to refinement of form and simplicity and delicacy of treatment.

Fashions in Jewelry

A Lady's Rambles Among the Jewelers.

THE election is over, the holiday season is at hand and affairs have resumed their normal condition. The retail stores devoted to the sale of jewelry and silverware are thronged now every pleasant day with eager seekers after novelties in the way of Christmas gifts. Never have the shop windows presented more varied and tempting contents than at the present date. Manufacturers generally took time by the forelock and prepared for the holiday demand earlier than usual. The result is that goods manufactured especially for Christmastide have been introduced into show cases and shop windows in advance of the period at which they are ordinarily expected much to the advantage of busy shoppers. Not only were manufacturers wise in introducing their goods thus early, but the unusually extended and varied lines of fine goods offered indicate the confidence with which they anticipated the brisk trade now being realized.

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MANY innovations mark the triumph of jewelry. Directoire and First Empire costumes, re-introduced abroad and at home, have established a sort of second Renaissance in matters of jewelry. This is especially true in France and England, where a reaction has set in toward beauty and grace in the various adornments of life. The simplicity which for a time distinguished the toilets of the feminine portion of the community has been replaced by that luxury so dear to every woman's heart. The queens of fashion, led by the Princess of Wales, who gives the keynote to the world of elegance, have shown themselves covered with jewels. We are assured, on authority not to be questioned, that the Directoire rivièrs of many of the costly gowns are embroidered and filled in with gems, and that old-fashioned clasp bracelets adorned and thickly set with stones have been reinstated, as have the girdles that played such an important part in ladies' dress during the early days of the Directoire period. Even the unmarried French girls may now wear diamonds, which have heretofore been restricted to matrons. It is true that fashion demands that the stones be small, but this is an innovation worth noting, especially as these stones appear not only on the fingers and about the necks of young girls, but in their ear rings.

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IN THE olden times two girdles were in fashion—the Venus girdle for young matrons, worn just below the bust, and the girdle of Diana for young girls, fastened lower around the waist. The double girdle of modern times, which, by the by, is a new device specially suited for the costumes of slender women, it would appear, is an outcome of the two girdles just described. It consists of a silver girdle worn just above the hips, while a second belt or girdle encircles the body three or four inches higher up.

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THE popular chatelaine in silver and silver-gilt and gold, is a revival of First Empire jewelry. These chatelaines are worn both with and without girdles, and are frequently weighted with six or eight articles that swing from the swivels, such as a watch, card case, scissors, note book, etc., etc. An imported chatelaine seen, in Louis XII. style, was made in old silver and consisted of three chased open

work chains, to which are attached a scent bottle in cut crystal, a note book with heavily chased silver cover and a pencil case.

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THE attractive art of carving stones *en relief* which has been discarded of late years, has now an opportunity of returning to use through the introduction of Directoire gowns with which cameos are in requisition for clasps, brooches, bracelets, ear rings, scarf pins, belts, rings and circlets for the hair.

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A DECIDED novelty for the toilet table is a silver casket enclosing curling tongs and crimpers in silver, with a silver lamp and silver alcohol flask.

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THE brooch is, perhaps, one of the best selling articles in jewelry. Painted miniature brooches promise to have a run. It is hardly possible, at this date, to tell to what extent this may be carried. Round and oblong brooches are in great demand, and the same may be said of those showing irregular outlines and simulating objects in nature such as birds, flies and flowers. A unique brooch of comparatively recent introduction represents a gold lyre in outline and is set with graduated pearls. Small circular brooches, in the center of which appears a moonstone surrounded either with small diamonds or small rubies, represent an ornament exceedingly fashionable in Paris, where, it may be well to state, ear rings of similar construction are sold to match. One of the very handsomest brooches recently placed on exhibition is in the form of a pheasant. The body and head of the bird are made of small diamonds closely set, the eyes are marked by rubies, with smaller rubies forming the comb and two solitaires serving as claws. The effect of this is at once striking and very attractive. The ornament can be worn in the hair or on the corsage.

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BROOCHES bearing the monogram of bride and bridegroom, interwoven in the figures of the year in which the joyful event occurs, promise to be popular as bridesmaids' presents.

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A STRING of gold beads coiled and knotted on the top, with a large diamond placed in the center of the knot, is one of the newest brooches.

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THE canes talked about for ladies during the summer season did not prove a success in Paris where they were started, being soon given over to the demi-monde. But the Tosca umbrella, an outgrowth, doubtless, of these huge sticks, is one of the latest French importations attracting notice. The sticks of these umbrellas are so long that the perfectly plain silk umbrella appears an insignificant part of the affair. The handles are the only decoration, and some of them are enormous in size. One seen is a round silver knob with a tiny watch set in it; another, also a silver knob, possessed a magic spring which, when touched, produced a pencil.

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BRACELETS and bangles remain popular articles in the jeweler's trade. A pretty bangle seen recently consisted of five circlets of gold wire, from which swing as a pendant on a tiny gold chain a large opal. Pencils in bracelets—an English notion—have found their

way to this city. Gold mistletoe bangles set with pearls or diamonds are among the prettiest things of English importation, and are likely to be much favored for holiday presents.

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ABROAD considerable discussion has been shown as to where the watch shall be carried. The leather bracelets in which a dial is placed have now many rivals in gold curb chain bracelets, gold coin bracelets, card cases and fans that hide in some place a tiny dial. Our own women, for the most part, wear watches in decorative cases swinging from a chatelaine or attached to the favorite Queen chain. Open face watches are quite popular, especially when made with a view to wearing on a chatelaine. A novelty in watches seen recently was one in a steel case finished so that it resembled black enamel. The numerals on the dial, as well as the hands, were of gold.

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CARNATION brooches are a feature. Some are in pure, dull gold, while others are enameled and powdered with diamonds.

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THE present English furor for coin jewelry has evolved a gold wire bracelet of three strands united here and there with little gold balls and having for a pendant a Roman coin. A handsome jet bracelet seen recently was composed of lozenges of both bright and dull jet, held together with tiny gold links.

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FANCY rings in gold or silver remain as popular as ever. A taking novelty in this class of jewelry has been recently introduced under the name of the puzzle ring. This newcomer, when in shape to wear, represents four strands of gold interlaced in loosely braided pattern over the top of the finger. When off the finger and shaken apart this ring is a veritable puzzle.

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AS MEN no longer show the slightest timidity in wearing jewelry, articles in jewelry have proven quite popular as Christmas presents for the sterner sex. Scarf pins, perhaps, lead in favor, and, in this connection, it may be mentioned that scarf pins have grown a trifle larger to harmonize with the larger scarfs now worn with business suits. A single large pearl mounted so as to show no setting, represents a very fashionable scarf pin. Pearls are also associated with diamond or other stones in fanciful shapes for scarf pins.

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NUMBERED with fanciful scarf pins are those in horseshoe or crescent shape studded with small colored stones.

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STUDS are now universally worn with evening dress. Some gentlemen wear two very small studs, while others wear three. Either number is correct. Fine pearls of small size and fine diamonds of small size divide favor among men of middle age, while younger men incline more to small but flawless rubies. Many conservative men continue to wear the white enamel studs and others give the preference to small studs of pure gold.

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WATCH fobs, which jewelers have been attempting to re-introduce to public favor the last two years, are now frequently seen with

evening suits. Watch chains for men are rather more massive this year than last, and there is a decided inclination to the wearing of seals, lockets or other charms.

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PENDANTS and lockets for watch chains are now seen in great variety of styles, some of the designs being very elaborate and made with a view to please every man, and be appropriate to his professions or pursuits if desired. A small locomotive, or a signal post with a colored light, to suit the fancy of a railroad man, and a compass, binnacle lamp or wheel for yachtsmen. Bicycles, dumb bells and parallel bars, tennis racket, base ball bats and horseshoes, all find purchasers in men interested in the different sports represented.

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PRESENT luxurious habits of men about town are this season illustrated in the new fad for hand-painted suspenders with gold or silver buckles. The suspender buckles are made in a variety of patterns, and are purchased, as a rule, by the young ladies who paint or embroider the silk braces with which they are to be worn. It need hardly be told that the lady's monogram occasionally appears in the intricacies of the worked design.

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ANOTHER evidence of a disposition to luxuries on the part of New York dudes, is the item of hose supporters, or garters, to put it more plainly. The circlet of bright colored silk elastic is fastened sometimes with a gold clasp richly chased or inlaid with gems; again, there are flat silver buckles on the face of which is etched a monogram.

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CANES with silver handles are a popular present for a man. Numbered with swell sticks is one an inch or more in diameter of English ash with a silver handle, on which appears the owner's signature.

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AS REGARDS smoking devices, these are legion. Quite new are the metal cigar boxes that perfectly simulate the cedar wood boxes in their enameled finish. Snuff boxes, which had something of a revival during the recent Thurman boom, figure along with cigarette boxes, match boxes and the like; many persons carrying the boxes for a "fad." The basket pattern in blended gold and silver is seen in some of these articles and is decidedly effective.

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OTHER articles appearing in the show cases and especially seasonable as presents for men, are silver pocket rules with hinges and tips of gold, razor strops with chased gold or silver handles, knives with gold and silver handles, and pocket combs and moustache brushes finished in silver.

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A STEADILY increasing demand for silver dinner and tea ware has brought about some exceedingly meritorious results, which I will have more to say about at some future time. It may be well to say now, however, that there is a decided tendency toward the bright finish again, though wide license is allowed for all the finishes and styles of ornamentation that have been popular the past two years. A favorite combination both in hollow ware for the table and articles for decorative purposes, is the bright finish with a border of rich

chasing. In this connection attention may be called to a new French process for electro-plating flowers, insects, etc. The metals used for the deposits are gold, silver and copper, the novelty being in the method of preparing the articles to receive the deposit.

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CIGAR lights designed especially for use at wine parties are suggestive. These are of silver in round and oblong shapes, and may be thrown or dropped upon the table or floor without fear of any catastrophe occurring, as they invariably balance themselves wick side up.

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DURING the holiday season there are no more popular goods than silver and silver mounted toilet articles. Manufacturers are doubtless aware of this fact, for every house of any note shows large and varied stock in this line. For toilet tables come everything that can possibly be placed thereon, from the candlesticks to the small cold cream box. Even the mirror is framed in silver. A pleasing finish for these and similar articles is heavy chasing that has been slightly oxidized. This furnishes an attractive medium between the bright finish and the old style of heavy oxidizing.

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NUMBERED with late novelties in mirrors is what is called the moon mirror, with small clamps in silver extended from the back over the edge of the glass, which is of oval form. The left side is covered in a silver crescent within which appears the man in the moon. Another phantasy in this direction is the cat mirror, which is formed with one pussy cat studying her reflection thoughtfully in the glass while a second one peers at her over the top of the mirror.

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MANICURE sets are too well known to require any description here. But mention may be made of the sets manufactured for display on silver trays instead of the usual plush or velvet cases. These trays take on a variety of shapes and are quite decorative in effect, the bottoms being covered with bright colored plush or velvet mats on which to lay the silver articles.

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WHILE on the subject of trays, mention should be made of miniature trays for hair pins and jewelry. In this connection, too, attention is called to the great variety of pin cushions in silver framework. Many of these affairs are jewel boxes and cushions combined. A decided novelty in this direction is what is introduced under the name of state room pin cushions. These consist of cylindrical silver boxes, finished with a little plush cushion at either end. One of these cushions opens and discloses the box which is designed to hold finger rings and other jewelry which the traveler may wish to discard at night.

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THE writing desk affords another object on which to bestow all sorts of silver and silver mounted articles, and manufacturers have not been slow in providing the same. Leading the long list are tiny silver candlesticks, then comes an infinite variety and number of inkstands, paper weights, small silver clocks, silver calendar frames, letter scales, paper knives and envelope openers. A novelty in inkstands is a bottle of rock crystal in fluted pattern, each alternate flute being of silver.

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THE stock of miscellaneous novelties is one of the largest and most varied ever offered. Lack of space forbids an attempt at even

a bare enumeration of them, much less a full description. To the curiously inclined a visit of inspection is suggested to one or more of such houses as the Gorham's, Tiffany's or Starr's, where specimens of everything worthy of the jeweler's and silversmith's art are to be found.

ELSIE BEE.

Gold and Gold Plating.

(Continued from page 49, November, 1888.)

AQUEOUS AMMONIA.



CALLED also "volatile alkali," "spirits of hartshorn," etc. This liquid is very volatile, and should be kept in well-stoppered bottles, in a very cool place. Its specific gravity should not be greater than 0.880. It is dangerous to break the bottles.

Carbonate of Ammonium.—Called also "smelling salts," and "sal volatile." The unchanged substance is in the form of transparent colorless pieces. By exposure to air, it loses ammonia, and becomes opaque white. It should therefore be kept in well-closed bottles.

Hydrocyanic Acid.—Called also "prussic acid." This is a colorless liquid, consisting of water more or less impregnated with the gas. Water will dissolve a very large amount of the gas. The strongest usually sold is known as "Scheele's," and contains about 5 per cent. of the actual substance; the ordinary medicinal acid contains only 2 per cent. It is extremely poisonous and dangerous to smell or inhale the vapors arising from it. It is decomposed by light, and should therefore be kept in an opaque bottle in a dark and cool place.

Cyanide of Potassium.—Called also "prussiate of potash." This substance also is a deadly poison, and almost as dangerous when absorbed by the skin as when swallowed. It is strongly alkaline and absorbs moisture rapidly, and should therefore be kept in well-covered jars or bottles.

Making Cyanide of Potassium.—As cyanide of potassium is used in electro-gilding and electro-deposition generally, and especially in making electro-silvering baths, it is desirable for the practical depositor to understand how it is made, and to possess information respecting its impurities, and the method of testing its quality. It is nearly always made by the following process: Take ferro-cyanide of potassium (yellow prussiate of potash), well crystallized, and free from sulphates; reduce it to a fine powder, and gently heat it to 110° or 120° C. (230° or 248° F.) in an iron pan, with constant stirring, until quite dry. Heat to redress a nearly covered iron crucible provided with a lip; put some of the dry powder into it, and when that is melted add some more, and so on, until the crucible is three-fourths filled, keeping the crucible covered as much as possible by means of an iron lid; gas will be evolved freely from the melting salt. Keep the salt melted about fifteen minutes, or until the end of an iron rod dipped into it shows a white sample. By allowing it to stand undisturbed a few minutes at the latter part of the operation and occasionally tapping the sides of the crucible, the iron, etc., which has separated from the ferro-cyanide, will settle at the bottom as a fine black powder; the colorless cyanide of potassium may then be poured off into a cold iron pan, or upon a thick and cold iron plate; it should be broken up whilst still hot, and preserved in a well-stopped jar. The black sediment (which contains much cyanide of potassium) should be scraped out of the vessel while still soft, and preserved, as water will dissolve at any time the cyanide contained in it.

If the process has been well conducted, the product will be of a clear white color, or at most but very slightly gray. The color, however, is not a matter of importance. To prevent oxidation of the cyanide, and consequent formation of cyanate of potassium, some operators recommend the addition of a few fragments of charcoal, and a little powder of the same to the salt, before it is entirely melted. The white portion of the product, made according to these

instructions, contains about 96 per cent. of actual cyanide, and the cyanide dissolvable from the black portion, by means of cold water, is nearly as pure. To obtain a cyanide of about 70 or 75 per cent, eight parts of the dried ferro-cyanide, mixed with three of highly-dried carbonate of potassium, must be subjected to similar treatment; it, however, requires a less high temperature for the fusion. By this plan, a larger total amount of cyanide of potassium will be obtained, than by the fusion of the ferro-cyanide only, because in melting the latter alone, one-third of the cyanogen escapes as gas; but in fusing it with the carbonate, this portion of the cyanogen unites with the potassium, and carbonic acid escapes in its stead. Cyanide of potassium, from which the ferruginous matter has not been completely freed, is known as "black cyanide." Fifty-five parts of crystallized prussiate, become forty-eight by drying, and nineteen of the carbonate become eighteen; and the sixty-six parts of the dry mixture yield about thirty-eight of clean cyanide, beside about six parts contained in the black sediment.

By experiments with the commercial white cyanide, I have found that 200 grains of it would dissolve in 230 grains of distilled water at 60° F., and that it was more soluble in water containing hydrocyanic acid. The plan of purifying cyanide of potassium from foreign salts by means of solution in alcohol, does not appear to effect the object perfectly. Dr. Schwarz recommends the purification of it from carbonate and cyanate of potassium, by digesting it in bi-sulphide of carbon, and recovering the solvent by distillation, but this appears to be an unlikely process.

Testing Cyanide of Potassium.—According to Glassford and Napier, the quantity of pure cyanide in any given sample of cyanide of potassium may be correctly ascertained thus: Make two solutions, one of the cyanide and one of nitrate of silver, each containing known weights of the salts, say one ounce of the cyanide dissolved in distilled water in a graduated glass vessel, so as to form six ounces by measure of solution; and 175 grains of the crystallized nitrate, dissolved in about two or three ounces of dissolved water; add the cyanide solution carefully and slowly to the nitrate of silver liquid, with continued stirring, until the precipitate first formed is exactly all re-dissolved. The amount of the solution required to effect this, with the above quantity of nitrate of silver, will have contained 130 grains of pure cyanide, and from the quantity used we may easily calculate the amount of pure cyanide in the whole ounce. It is said by the author, that "when nitrate of silver is added to a solution of cyanide of potassium, so long as the precipitate formed is all re-dissolved, we obtain the *whole* of the cyanide of potassium in combination with the silver; none of the other salts in solution take part in the action, even though they be present in large proportion. This enables us to test the exact quantity of cyanide of potassium in every sample."

I have employed this process on many occasions, and have found from 28 to 96 per cent. of actual cyanide in different samples. In what is termed "black cyanide," I have found from 17.65 to 23.40 per cent. of black insoluble matter, and of soluble salts, not cyanide, from 5.21 to 5.43 per cent., and in a gray specimen 1.35 per cent. of black solid matter, and 18.75 per cent. of soluble salts not cyanide. This black substance burned in a flame like iron filings, evolved an inflammable gas by addition of dilute sulphuric acid; and after digestion in dilute hydrochloric acid, much black, combustible powder was left; it doubtless consists of iron and carbon. The other impurities consist of carbonate, sulphide, chloride, cyanate, ferro-cyanide of potassium, and silica. The chloride of potassium is derived from the original salts, and the sulphide from sulphate of potassium contained in them; the silica occurs when the cyanide is made in an earthen crucible; and even when the process is well-conducted, and pure materials used, the product sometimes contains 20 per cent. of cyanate of potash, produced partly by the contact of the air with the melted mixture. The presence of even a small quantity of sulphates in the materials is said to impart to

the cyanate a blue, green or pink color, probably in consequence of the production of an alkaline sulphide.

Ferro-cyanide of Potassium.—Called also "yellow prussiate of potash." This salt is in the form of large, clear yellow crystals, and is used for making the simple cyanide of potassium.

Acetate of Copper.—Called also "crystalized verdigris." It is in the form of dark green crystals, soluble in water. Common verdigris is in lumps or powder of a bluish color, and contains a large proportion of copper, but is insoluble in water; it dissolves in diluted acetic acid, and then forms the same liquid as the solution of crystalized verdigris.

Acetate of Lead.—Known also as "sugar of lead." It is a colorless crystalline salt, with an appearance like that of loaf sugar. It should be entirely soluble in distilled water; if it is not so add a small quantity of acetic acid (wood vinegar.)

Test-papers.—The most useful variety of these is neutral tint litmus; the red and blue kinds may also be employed.

Thermometers and Hydrometers.—The operator will also require a couple of thermometers, and several hydrometers; the latter should be suitable for testing the specific gravity, both of aqueous ammonia and of strong sulphuric acid.

Syphons.—The most convenient are pieces of tubing of glass, gutta percha, or lead, bent to the proper forms; or a piece of india rubber tubing. To cause them to act, they should be filled with the liquid to be decanted, the ends closed by the fingers and then inverted, with the shortest leg plunged into the liquid.

Filters.—Small ones for filtering dilute acids or alkalies, and liquids generally, are made by doubling a circular sheet of filtering paper (that is, unsized or blotting paper) twice at right angles, opening one of the outer folds, and placing the filter in a glass funnel. Large ones are usually formed by tying or nailing the edges of a piece of washed or unglazed calico to those of a square frame of wood, or of a wooden hoop. A filter for strong acids or alkalies is made by placing a loose plug of asbestos in the neck of a glass funnel, or by filling the neck of the vessel with broken glass, and covering the latter with a layer of asbestos.

Remedies for accidents.—Since the electro-metallurgist is constantly handling various poisonous substances, we append the best antidotes to be used in case of accident. Where the case is serious: that the operator should have accidentally swallowed a poisonous drug, or spilled acid over himself, of course, it is always advisable to summon a physician at once, pending whose arrival, the proper antidote may be safely administered, and should always be kept on hand in a convenient spot, where it may be found at once, when wanted—the loss of one-half a minute may cost a man's life or excruciating suffering.

If either nitric, hydrochloric or sulphuric acid have been swallowed, the best remedies are, either to administer abundance of tepid water to act as emetic, or to cause the patient to swallow milk, the whites of eggs, some calcined magnesia, or a mixture of chalk and water. If those acids, in a concentrated state, have been spilled upon the skin, the parts should be washed with plenty of cold water; and, if necessary, a mixture of whiting and olive oil then applied. A useful mixture for such cases is formed by slaking about one ounce of caustic lime with a quarter of an ounce of water, then adding it to a quart of water and shaking the mixture repeatedly; decanting the clear liquid, and beating it up with olive oil to form a thin pomatum. Acids spilled upon the clothes should at once be treated with plenty of a quite dilute solution of ammonia or its carbonates and then well washed with water.

In cases where hydrocyanic acid, cyanide of potassium or the ordinary silvering or gilding solutions have been swallowed, almost instant death follows; if it does not, *very cold* water should be allowed to run upon the head and spine of the sufferer, and the patient be made to swallow a dilute solution of either acetate, citrate or tartarate of iron. If the poisoning arises from inhaling the vapors of hydrocyanic acid, cold water should be applied as above,

and the patient be caused to inhale atmospheric air containing a *little* chlorine gas. It is a dangerous practice to dip the naked hands or arms into cyanide solutions (as workmen sometimes do, in order to recover articles which have fallen into them), because those liquors are absorbed by the skin, and produce poisonous effects; they also cause very painful sores, which should be well washed with water and the mixture of lime-water and olive oil applied.

If alkalies, such as potash or soda, have been swallowed, a dilute solution of vinegar, some lemonade, or extremely dilute sulphuric acid, should be given; and, after about ten minutes, a few spoonfuls of olive oil.

If metallic salts have been taken, the patient should be made to vomit by means of tepid water, and then to swallow some milk, whites of eggs, precipitated sulphur, or some sulphuretted hydrogen water.

To remove stains of sulphate of copper, or of salts of mercury, silver, or gold, from the hands, etc., wash them first with a dilute solution, either of ammonia, iodide, bromide, or cyanide of potassium, and then with plenty of water; if the stains are old ones, they should first be rubbed with the strongest acetic acid, and then treated as above.

Grease, oil, pitch, or tar, may be usually removed from the hands, clothes, etc., by rubbing with a rag saturated with benzine, spirits of turpentine, or bisulphide of carbon.

[*The End.*]



The following list of patents is compiled from the records of the United States Patent Office, and specially reported to THE JEWELERS' CIRCULAR.

Issue of October 23, 1888.

18,701—DESIGN. Handle for Spoons, Forks, etc. Robert H. Klingel, West Stratford, assignor to The Holmes & Edwards Silver Co., Bridgeport, Conn. Term of patent, 14 years.

391,398—Button. William Bourke, Brooklyn, N. Y. A lever button, with bent and recessed shank, the movable shoe mounted on the shank and having a slotted top plate, a bottom plate, and a plate between the top and bottom plates provided with recesses to receive the hinge projections on the sides of the shank, and constituting both a spring and bearing plate, of which the spring-tongue presses the bent shank toward the bottom of the movable part.

391,421—Gold Separator. William A. Merralls, Kansas City, Mo.

391,446—Clock Synchronizer. Arthur G. Wiseman, Webster Groves, Mo.

391,504—Music Box. Emile Bornand, Ste. Croix, Switzerland.

391,510—Screw Cutting Die. James M. Carpenter, Pawtucket, R. I.

391,531—Timepiece Holder. Joseph H. Hodgetts, Wallingford, Conn.

391,534—Compass Corrector. Henry B. Hunt, New York, N. Y.

Issue of October 30, 1888.

18,705—DESIGN for Surface Ornamentation of Glass. Anthony D. Brogan and Andrew M. Malloch, Glasgow, Scotland.

18,706—DESIGN for Match Safe, etc. Virgil K. Brown, Bryan, O.

18,709—Ornamentation of Watch Cases. Charles H. Pfeil, Chicago, Ill., Assignor to Pfeil, Williams & Bredt, same place.

15,979—TRADE MARK for Optical Instruments. Spencer Optical Mfg. Co., New York, N. Y. "The word 'Audemair,'" used since April 15, 1885.

391,802—Alarm Clock. Almeron M. Lane, Meriden, Conn. The

angle lever has a laterally vibrating arm which extends to the holding and releasing mechanism, and there is a link connecting said angle lever with the vibrating verge of the alarm movement.

391,883—Bracelet. Shubael Cottle, New York, N. Y. This bracelet contains a pair of hollow boxes, and through an aperture in the side of each of these boxes passes a tube, the ends of said tube having curved-over enlargements.

391,885—Clamp Barrel for Clock Springs. Charles E. Emery, Brooklyn, N. Y.

391,886—Re-winding Clock. Charles E. Emery, Brooklyn, N. Y.

391,934—Eye-Glass Frame. Anthony J. Bellati, Philadelphia, Pa. The nose rests are pivoted near their centers to the rigid extensions of the spring of the frames in the plane of the lenses, and are adapted to swing in a plane perpendicular to the lenses.

391,969—Electric Self-Winding Clock. Vitalis Himmer, New York, N. Y.

391,996—Medicine Dial. Miley B. Wesson, Fort Worth, Texas.

392,036—Machine for Polishing Sheet Metal. Allen Johnston, Ottumwa, Ia.

392,053—Spectacles. August Morck, Jr., Warren, Pa.

392,056—Self-Setting Timepiece. Emanuel Müller, New York, N. Y.

392,140—Stem Winding and Setting Watch. John H. Thornhill, Wilkesbarre, Pa. The principle features of this patent are as follows: The yoke pivotally mounted and supported intermediately of its length, and provided with gear wheels adapted to be thrown at will into or out of gear with the winding gear or with the setting gear by the oscillatory adjustment of the yoke. The winding pinion adapted to be driven by the winding bar, the bore of said pinion being at one end enlarged, a longitudinal stem or bearing provided with an enlarged portion intermediate of its length adapted to serve as a bearing for said enlarged bore, the inner end of said adjustable stem being housed or having a bearing in a block mounted upon the bottom plate. And the lever fulcrumed upon the bottom plate, and having one of its arms in contact with and adapted to be operated by the inner end of the adjustable stem, and having its other arm pivotally connected with the springs, which are adapted to be adjusted thereby to shift said yoke and throw its gear wheels into or out of contact with the winding gear or with the setting gear.

Issue of November 6, 1888.

18,722-3—DESIGN for Watch Bridge. Charles W. Ward, Yonkers, N. Y. Term of patents, 7 years.

392,230—Electric Regulating and Hand Setting Mechanism for Clocks. William S. Scales, Somerville, Mass., Assignor to the Synchronous Time Co., Portland, Me. In a normally closed electric circuit containing several clocks, a mechanism normally cut out for moving the regulators of the several clocks, that they may take a gaining or losing rate when needed. A circuit-controlling device for opening the circuit to introduce a master clock, and to transmit the time impulse, and the master clock governing the operations of the circuit-controlling device.

392,302—Pin. Barton A. Ballou, Providence, R. I. An improved pin tongue, made entirely of one piece, having a pointed stem near the hinge joint, and the upper portion of the pin tongue being enlarged.

392,337—Lathe. Carlos Holly, Lockport, N. Y.

392,354—Machine for Forming Rings, etc. William G. Martens, Rochester, N. Y. Two bed rollers lying side by side and provided with one or more grooves, and a plain bending roller resting centrally over the bed rollers. The bending roller is removable endwise, and can be adjusted perpendicularly.

392,357—Finger Ring. John B. Newman, Milford, Pa. An outer split ring with a cover having a transparent eye, combined with an inner ring provided with a flange on each side, and an intermediate split ring adapted to turn loosely on shoulders on the inner ring. Pictures and other ornaments can be held in a recess formed in the

outer surface of the inner ring, and are visible through the outer split ring.

392,363—Eye-Glass Holder. Miles Riggs, New York, N. Y. This is made with an attaching pin, a rigid hook, which ends in a turned over spring.

392,367—Holder for Eye-Glasses. Samuel W. Saxton, New York, N. Y. This has a hollow bar, to the top of which is rigidly secured a pin pointing downwards. At the bottom of the bar is a similar pin pointing upwards, but secured by means of a spring in the hollow of the bar, and the spring moves it in an upward direction.

392,438—Combined Electric Meter and Electric Clock System. Philip Lange, Pittsburg, Pa., Assignor to the Westinghouse Electric Co., same place.

392,450—Manufacture of Glassware. Harry Northwood, Wheeling, W. Va. As a new article of manufacture, glassware having a surface of lusterless adherent of unvitrified sand.

392,522—Eye-Glasses. Frank Müller, Philadelphia, Pa. Two posts, each supporting a lens or frame, an extremity of the bow-spring and a nose rest. The nose rests are independent of the bow-spring, and are set into slots in the posts, where they are secured by pivots and are thus moveable.

392,558—Wire Chain. Franklin P. Hinds, Groton, Mass. A chain composed of short sections of spirally coiled wire, interlinked.

392,580—Stem Winding and Setting Watch. Casper Kistler, Sterling, Ill. The winding stem provided with an annular recess, a forked lever adapted to bestride the stem and fit into the recess, and the lever provided with lug.

Issue of November 13, 1888.

18,727—DESIGN for Spectacle Frame. Clement B. Bishop, Philadelphia, Pa., Assignor to Benoni Frishmuth, same place. Term of patent, 7 years.

18,729—DESIGN for Badge. Joseph K. Davison, Philadelphia, Pa. Term of patent, 14 years.

18,730—DESIGN for Badge. Arthur M. Ebbets, San Francisco, Cal. Term of patent, 14 years.

18,732—DESIGN for Ornamentation of Glassware. John S. O'Connor, White Mills, Pa. Term of patent, 7 years.

18,733—DESIGN for Watch Case. Lewis A. Parsons, Brooklyn, N. Y., Assignor to the Brooklyn Watch Case Co., same place. Term of patent, 14 years.

16,007—TRADE MARK for Silver or Silver Plated Table Ware. William H. Rogers, Hartford, Conn. Used since August 1, 1888. "The representation of the cimeter."

392,589—Screw Holder for Watch Repairers. William E. Counter and Lee O. Miller, Three Rivers, Mich. A reversible screw-holding device, consisting of two circular plates, provided with holes and indication marks or designs of watch movements, those on one plate representing different movements from those on the other.

392,729—Stop Watch. Auguste and Fritz Henchoz, Locle, Switzerland. Patented in England, Italy and France. The wheel and cam ratchet wheel, in combination with the lever bridge, the axis having its pivot in a hole in the lever bridge, the heart cam pinion and hand upon the axis, and a spring acting to press the bridge and pinion toward the wheel.

392,851—Opera, Field or Marine Glass. William A. Cardwell, The Moat Croft, Eastbourne, County of Sussex, England. A glass constructed and formed with caps or covers connected to the top by means of spring or other suitable hinges, so that they will lie back out of the way when the instrument is in use, and will fold down over the ends when the instrument is closed or compressed, and be there held by catches.

Issue of November 20th, 1888.

18,739—DESIGN for Bracelet. Shubael Cottle, New York, N. Y. Term of patent, 7 years.

393,000—Timepiece Dial. Martin V. B. Ethridge, Boston, Mass.,

Assignor of two-thirds to John Swann, New York, N. Y., and Henry E. Waite, West Newton, Mass. A radial series of rotary spindles carrying numeral devices, with the hours of the day upon the faces, and carrying also pinions and plain faced blocks with a rotative disk, upon which is a projecting arm having a segment adapted to engage the pinion and rotate the spindles, when a notch on the periphery of the disk comes opposite the plain faced blocks.

393,159—Synchronizing Mechanism for Clocks. Edward Kronenberg, Philadelphia, Pa.

393,170—Apparatus for Electro Plating. Louis McMurray, Baltimore, Md.

393,232—Diamond Setting. Gottfried Heppding, New York, N. Y. A number of cramps with enlarged scallops at their base, the scallops being formed to receive jewels.

393,239—Combined Bracelet and Button Hook. Alice Johnstone, Avondale, N. J. The ornament of the bracelet forming an interlocking device, with another part of the bracelet in the form of a button hook.

393,248—Watch or other Case. Charles E. F. Lewis, Brooklyn, N. Y. A metal band or plate as a means of stiffening and ornamenting the cover of a watch case.

The Tax on Commercial Travelers.



THE Supreme Court of the United States has again decided that the tax levied upon commercial travelers in certain states, is unconstitutional. It had previously so decided in at least two cases, but those states that have enacted such laws hold to them most tenaciously refusing to accept the decision of the highest court until it shall have passed upon their own particular form of this most obnoxious law. The latest case is that upon the law of Texas. A traveler from New Orleans was arrested in Texas for selling goods without having first taken out the license required by the state law. He was fined, but appealed the case to the state court of appeals, where the law was held to be valid, and the decision of the lower court was affirmed. The case was then carried to the United States Supreme Court where a decision was finally rendered a short time since. The court holds that the law is unconstitutional inasmuch as it levies a tax upon residents of other states that is not imposed upon citizens of that state, and is therefore a discriminating tax, and at variance with the constitution of the United States. The court refers to the Tennessee case, wherein a similar decision was reached, and intimates that it should have been accepted as determining the matter relative to this tax, but it did not, and we doubt if the present decision does so. Indeed, the Auditor of Virginia has been publicly quoted as saying that the commercial travelers' tax was too valuable to that state to be thrown aside, and that he should continue to collect it until the Supreme Court should decide that particular statute to be unconstitutional. He relies upon the fact that the wording of the Virginia law differs from that of the other states, although it accomplishes the same object, and that the Virginia law must be passed upon before he will abandon its enforcement. In all cases the Supreme Court has decided it has been, of course, the intention of the Court to declare all discriminating tax laws to be unconstitutional, and it was naturally expected that the state courts would so maintain in any cases that should come before them, where this point was raised, but such has not been the result. In the Texas case, which came up after the Tennessee case had been decided by the Supreme Court, the judge in the state court, in holding the Texas law to be valid, intimated that the Supreme Court did not know its business, and its decisions were not binding upon any other court. There are now but few states that hold to this unjust tax, but before they will be willing to abandon them, it will probably be necessary for some one to make a test case in each instance, and carry it to the Supreme

Court. The travelers' associations cannot do better service to the interests they represent than to have this done at the earliest possible day. The commerce of this country belongs to the people, and no state has the right to affix limitations to its operations, or to impose taxes upon one class of citizens that are not shared by all persons of the same class. An effort was made two years ago to have Congress pass a law declaring that the "drummers' tax laws," as they are called, of the different states were unconstitutional, but Congress declined to legislate, on the ground, as then stated, that the decision of the Supreme Court had already settled that point, and it would be superfluous for Congress to legislate to give effect to the judicial decision of the highest court in the land. But as the several states do not heed the decision of the Supreme Court, its incorporation into a national statute would effectually prevent any further attempt to enforce these unjust laws. The effort to secure such legislation should be renewed this winter.

Lathes and Lathe Work.

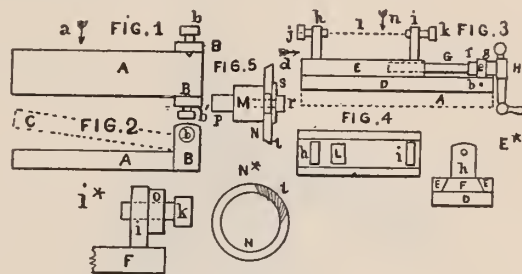
BY THE MODEL WATCHMAKER.



HERE ARE two very good ways to get up a cheap and simple wheel cutting engine. One is to use the arbor or lathe spindle to carry the cutter, and the other is to let the lathe spindle carry the wheel to be cut. I will first describe the method by which the lathe spindle carries the cutter, and then tell how to manage when the order is reversed and the lathe spindle supports the wheel to be cut. In describing the machine I will suppose we are using an American lathe of the $1\frac{1}{2}$ size. For making such attachments either brass or cast iron can be used. It may be well to say, however, that cast iron is the stiffest metal one

can use for this purpose, and the most rapidly worked and brought into shape. The little wheel cutting engine will not only cut ratchet wheels, but any kind of wheels for which you will take the trouble to make cutters up to an inch in diameter. In making such attachments of cast iron, care should be taken to make the wooden pattern as near right size as possible to save filing, allowing only just enough to compensate for filing away and shrinkage. For such small castings as these we are dealing with, $\frac{1}{8}$ of an inch is quite enough to allow. I give the sizes to which the finished parts are to be made, and the reader can allow the $\frac{1}{8}$ of an inch when he makes the patterns. The first piece we will make is the bed plate which is $\frac{1}{4}$ of an inch thick and $3\frac{1}{2}$ long by 2 inches wide. At one end of this bed plate we attach two ears $B B$, one inch wide and one inch high. At fig. 2 is shown a side view of fig. 1, seen in the direction of the arrow a . We next get out another piece exactly like A except there are no ears attached. This piece is shown at D , fig. 2, and is intended to lay on top of A , between the two ears $B B$. Through each of the ears goes screws $b b'$. These screws enter into little center pits drilled into D , and allow it to work up and down to the line C . On top of D goes a slide of $\frac{1}{4}$ of an inch thick shown at E , fig. 3. An end view is shown at diagram E^* , as seen in the direction of the arrow a , fig. 3. Here the two pieces $E E'$ are screwed to the piece D , and the piece F slides between them. The sliding bar F is moved back and forth by the screw G and crank H working in the stud e . The screw G is intended to work the slide F back and forth only a little way. About the simplest way to make the screw G is,

take a piece of steel wire about $\frac{3}{8}$ of an inch in diameter and 2 inches long, cutting a screw for about an inch on the end which goes into F . A collar f is soft soldered on G as shown, and another loose collar goes between the crank H and the stud e . It will be seen that the screw will move the piece F back and forth by the action of the collars f and g . Attached to F are two studs $h i$. These studs carry two screws which serve as centers to hold the arbor or piece to be cut. The studs $h i$ extend upward above the upper face of F half an inch, and the line of centers l is $\frac{3}{8}$ of an inch above F . If the centers $j k$ are found to be unsteady, two jam nuts can be put on, that is, one on each screw. Perhaps some of my readers will not know what a jam nut is; to such I would say, it is a loose nut put on a screw to "jam" against the stud to hold it steady and prevent its wriggling. As, for instance, in diagram i^* , which is an enlarged view of the stud i , fig. 3; o shows the jam nut, and, if we found the screw k to be a little loose and shaky in the stud i , if we set the nut o firm against i , the screw k will be perfectly rigid. At fig. 4 is shown a view of the slide F seen in the direction of the arrow n , fig. 3. The recess shown at L is cut into F to enable us to cut a wheel one inch in diameter, but no recess will be needed for any wheel of the size used in a watch. The edges of F and the two outside pieces $E' E$ are fitted at an angle of 60 degrees. We will now leave the machine a little incomplete, and tell how to make a cutter to cut the ratchet on the winding arbor we set out to make. The first thing to do now is to make a chuck to go into the lathe spindle precisely like those we use for cement. Such a chuck is



shown at M , fig. 5, where the screw which goes into the lathe is shown at p . The cut at fig. 5 is a vertical longitudinal section on the line of the axis of the lathe. The part at N represents the cutter with the angle at t about 52 degrees. The cutter N should be made of steel about $\frac{1}{10}$ of an inch thick and $\frac{3}{4}$ of an inch in diameter. The end of the chuck on which the cutter goes is turned down as shown at u to about $\frac{1}{8}$, which exactly fits the hole in the center N . The length of u is a trifle less than the thickness of the cutter, so that when the washer s is pressed against the cutter the screw r will draw the cutter N firm and true against the chuck M . The chuck M should be about $\frac{3}{8}$ of an inch in diameter and is best made of steel, but it need not be hardened; hard brass will, however, answer. The screw r and washer s should be of steel and tempered. At diagram N^* is shown a side view of a cutter. The beveled edge at l' is cut with a graver into lines as shown. In order to do this get a piece of steel forged thin, or better, get some good sheet steel and cut out a disc $\frac{3}{4}$ of an inch across the face and lay it between two large pieces of charcoal and heat it red hot with the blow pipe, letting it cool off between the two pieces of coal. In cutting such a disc with the graver, the lines are to be so close to each other the spaces between them come to an edge and make a cutting edge like a file. The steel edge of N cuts better with the graver if both disc and graver are kept oiled. The only difficult thing about making such cutters is to have the steel soft enough so the graver readily cuts it, and if the reader finds the steel too hard after softening between the two pieces of charcoal, he had better make himself a charcoal annealing box. To do this get a piece of wrought iron pipe six inches long and $1\frac{1}{4}$ outside diameter. Into each end have wrought iron plugs fitted; one of these plugs had better be welded in, leaving the other loose. Enough charcoal is now pounded fine to fill the tube. We take five or six discs, such as we desire to make cutters

from, and put them into the iron tube along with the fine charcoal, packing the tube full of fine coal as it will go; any little crack between the plug and tube should be plastered up, a paste made by mixing common whiting and water. The tube and contents are now to be heated red hot and allowed to cool off as slow as possible.

The Marsfels Watch Collection.

[From the *Deutsche Uhrmacher-Zeitung*]



BY THE kindness of MR. C. MARSFELS, of Frankfort-on-the-Main, we are enabled to-day to commence with the publication of the description of his watch collection, which, doubtless, is unique of its kind. It contains many celebrated masterpieces of the horological art from the incipency of the invention of watches down to our modern era, and is as complete and diversified, both as regards the artistic ornamentations of their cases, dials, etc., and the intricacy of their movements, as any to be found

in museums, or in private collections.

As is known, PETER HENLEIN—not *Hele*, as he is generally called incorrectly—is the inventor of watches. He was the son of a tradesman in Nuremberg, was born 1480, died 1542.

Of his education we know nothing beyond that he learned the trade of locksmithing, and became master in 1509. But that Peter Henlein is the inventor of watches is beyond doubt established by the remarks of Johannes Cocleus, made in the appendix to the edition of his *Cosmographia Pomponii Melac*, issued in 1511, in which he says: "*Inveniuntur indies subtiliora, etenim Petrus Hele, juvenis adhuc admodum, opera efficit, quæ vel doctissimi admirantur mathematici; nam ex ferro parvo fabricat horologia plurimis digesta rotulis, quæ, quocunque vertantur, absque ullo pondere et monstrant et pulsant XL. horas, etiamsi in sinu marsupiove contineantur,*" which, rendered into English, means, "Day after day more subtle things are invented; thus Peter Henlein, still a young man, manufactures works which excite the admiration of even the greatest mathematicians, because he constructs with little iron *horologia* with very many wheels, which, no matter how they are laid, and without any weight, show 40 hours and strike, no matter whether they are carried in the bosom or in the money purse."

This establishes, first, that the *horologia** of Peter Henlein, because they marched without weight, had the spirally-wound spring as motive power. This circumstance, together with the other, that the *horologia* were represented as being made from a little iron, and that they could be worn as well in the bosom as in the pocket, fully entitles us to assume that they were pocket watches in the modern acceptation of the word. Also that this art of constructing watches was the special invention of our locksmith is proved by the sentence quoted from Cocleus, "*Inveniuntur indies subtiliora*—Day after day are

invented more subtle things." Peter Henlein, the Nuremberg locksmith, therefore, is incontestibly the inventor of watches, and at least about 1500, if not earlier.

If it is true, what Cocleus reports (and we see no reason to doubt it), then watches marched 40 hours, which shows Henlein's mechanical genius in a still better light, because nearly all watches made by his immediate successors generally went only 12 hours with one winding. It is possible that Cocleus permitted himself to be deceived by the secret-mongery peculiar to that age. But when it is considered that the first watches of Henlein were most probably so-called "travelers' watches"—because the tedious manner of traveling in those days was in first line the incentive toward the invention of watches—it is very possible that they went 40 hours. In fact, the German National Museum of Nuremberg possesses such a travelers' watch, made in 1560, which goes 36 hours with one winding. The watch is also interesting, because it has an automatic striking apparatus. Henlein's watches must have been of a similar kind, because Cocleus says that they "showed the time for 40 hours and struck."

According to this, they were provided with an automatic striking arrangement. Of course it is not absolutely excluded that Cocleus meant by *pulsare* the "ticking" of the watch, although this interpretation cannot be well accepted, because later scientific books continue to use the expression "show and strike," and, second, Henlein's watches contained very many wheels—*horologia plurimis digesta rotulis*—which has a meaning only when we assume that the watch had a going and a striking train.

It is also known that as early as 1511, watches were an object of demand as pastime by the nuns in the nunneries of Nuremberg. Among writings preserved from that age is a letter which the Nun Felicitas Grundherrin writes to her father, Leonhard Grundherrin, praying him to send her a few *Orrlein**, by which can be only understood the watches invented by Henlein, who had lived for a length of time with the barefooted monks, for whom he had made several *Orrlein* in payment for the protection accorded him. The Nun Felicitas belonged to the St. Clare Nunnery, which was under the protection of the barefooted monks.

It can safely be assumed that the new invention did not long remain the exclusive secret of our locksmith, because there lived at that time, in many cities and towns, especially in Nuremberg, very capable locksmiths, very skilful in mechanical works, and it is obvious that they were able to comprehend and imitate the mechanism.

Peter Henlein was, therefore, not only the inventor of watches, but also the founder of the independent art of the horologist, who, although the latter called himself occasionally "horologist," was almost invariably counted to the locksmiths.

Only since Henlein's time the art of horology became independent, and gradually separated into clockmaker and watchmaker. In many cities, however, watchmakers continued for a long time to belong to the guild of the locksmiths.

It is not known for certain whether a watch of Peter Henlein has descended to the present time. Indeed, a wrong path was pursued for a long time, as the watches called "Nuremberger living Eierlein" only were believed to be the direct invention of Henlein. This, however, is most likely an error, because neither Cocleus nor the Nun Felicitas Grundherrin speaks of "Eierlein." The former, who wrote in 1511, calls them timepieces of a little iron, therefore small watches, and the latter calls them, in her book of the same year, simply "Orrlein," that is, Uehrlin, small watches. This mistaking of the "egg" watches as being the invention of Henlein has caused antiquarians to consider this kind of watches to be the oldest, and therefore to look only for them. Many a precious watch which was not in the shape of an egg has remained unknown or was destroyed on account of this equivocation. The shape and name of watches as eggs arose only in the XVIth century.

One of the oldest watches known, belonging to the time from bet-

[*The reader is well aware that the learned of that epoch used the Latin language as a vehicle for recording their thoughts; *horologia*, *hora*, the hour, was corrupted into the German *Orrlein*, *Oerlein*, *hore*, *ore*, finally into *Uehrlin*, *Uhr*. Watches were also called *Nuremberger Eierlein*, or *Eier*; the translator of THE JEWELERS' CIRCULAR, however, thinks that *Eierlein* is again simply a corruption of the word *Oerlein*, and that when the old watchmakers subsequently made the watches egg-shaped, they either wittingly punned on the word, or that they adopted the egg shape because it gave them more room to arrange the wheels. The first use of the word "watch," as applied to a timekeeper, occurs in a record dated 1542, in which it is stated that Edward VI. had "Onne larum," or watch of iron.—TRANSLATOR.]

ween 1510 to 1520, is to be seen in the collection of old watches in the Bavarian Trade Museum of Nuremberg.

This watch is not yet either oval or egg-shaped, as many watches of the middle of the XVIth century are, but perfectly round, and so small that its diameter is only two centimeters, while its height amounts to 1.2 cm. The gilt-brass case has upon each side only a very slightly concave cover with an extremely primitive closing. That on the back contains, beside the embodiment of justice (in the right hand the scales, in the left the sword), within it a masculine, beardless profile, with a toga knotted over the shoulder—perhaps the profile of Phœbus Apollo. The front cover is perforated, and its exterior circle is ornamented with a *repoussé* wreath of acanthus leaves; the interior circle, which is connected with the outer by bridges at four opposite places, contains an engraved arabesque ornament of the simplest kind, and surrounds four acanthus leaves, united in the center, while they simply touch with their points the circle enclosing them, but show the dial between them. The fairly high rim of the watch contains in the middle a raised bead ornamented with acanthus leaves. The two moldings on either side of it are ornamented with vertical notches lying close to each other. The closing, as already said above, is of a very primitive kind, but more thoughtfully arranged than the majority of later egg watches. Through the bead of the rim, opposite to the bow ornamented with a ribbon ornament, passes a piece of sheet iron, which both above and below ends in a point slightly bending to the outward. Both points project a little above the rim of the watch. At the proper place each cover is provided with a projecting, three-cornered, small shield, which has a cross cut at the basis in order to let through the point of the sheet iron.

Through the perforated cover is seen the gilt-brass dial partly connected with the case. On opening the cover is seen the ray-surrounded face of the sun. This is encircled by a quarter-hour circle, as the watch has only one (the hour) hand. The small alloy fields which mark the quarters are alternately bright and shaded, with inclined strokes. Another circle shows the Roman hours from I. to XII., rather deeply engraved. Above each figure is a small button; the one standing over XII. is provided with a small, sharp point, which was for finding the approximate time at night; because the igniting of light was not as trifling an affair as at present, when we have lucifer matches. If the fair possessor of the watch—it was doubtless once the property of a lady—desired to know the time of night, she took the watch, found with the index finger the sharp-pointed projection over XII., and then felt carefully over each successive button until she came to the point of the hand. In this manner she was able to find the time within one-quarter hour.

More interesting, however, is the movement, which is entirely of iron, even the two plates not excepted. The entire structure of the movement confirms that the watch must have been manufactured in the earliest time. The spring does not yet lie in a barrel, but in this instance it moves around the arbor of the spring wheel, and in a circle around it are drilled in four upright standing pins, against which the spring lies in its reposing condition. This arrangement for the limitation of the developing spring must have followed immediately after the invention of the watch; it is the oldest precursor of the barrel. Beside the spring wheel are also present four other wheels: a hand wheel, a great wheel, a crown-wheel, and a vertical wheel. The latter depths into a very long spindle which forms the escapement. The round, two-armed balance is so small that its diameter is barely one-half of the length of spindle. Of course, it contains no balance spring, having been invented in 1658, by Robert Hooke. Instead of the balance spring, small hogs' bristles, standing upright, are inserted in a movable lever. On these bristles the balance strikes in its reciprocating motion, and by a displacement of the lever the motion could be regulated somewhat by the balance with its two arms touching either the hogs' bristles standing closer to, or farther removed from, its center, in which manner a slower or a quicker rate was effected. That this method of regu-

lating was very uncertain, is evident. At any rate these hogs' bristles were the precursors of the balance spring, which is at present called the soul of the watch.

The watch also shows the earliest attempt toward regulating the power of the mainspring. Upon the back or upper plate sits upon the arbor of the spring wheel a pinion which depths into a stop wheel and prevents the undue tightening of the mainspring. Upon this stop wheel is also fastened a disc, upon the circumference of which is turned a groove. A strong spring, bent in a semi-circle, upon the end of which sits a small roll, presses this upon the mentioned disc, so that this depths into the groove, and acts like a brake upon the draught of the spring. By reason of the incorrect proportions of wheels and pinions, it was necessary to use a strong spring; the function of the brake was to compensate the irregularities resulting from this—that is, to produce a uniform consumption of the spring's force. This was the expediency resorted to in the time when the fusee and chain were still unknown.

The watch goes about 12 hours with one winding, and the balance makes 22,000 vibrations per hour. Since the watch appears to have gained in spite of the brake, the balance rim has been weighted with lead, perhaps by the maker himself.

The four pins inserted in place of the barrel and spring wheel, the bristle in place of the steel balance spring, the movement entirely of iron, and, in fact, the whole disposition of the watch, as well as its decoration, prove that it is one of the very earliest-made watches. In the shield at the back are stamped the letters H. G., one letter on

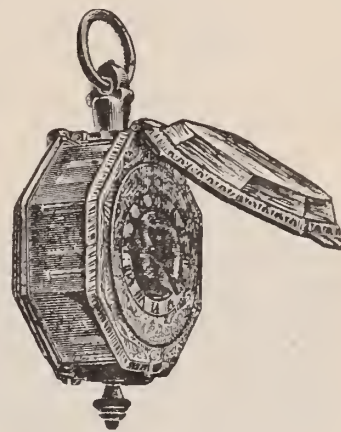


FIG. 1.

each side of two crossed spades; this was the stamp and trade mark of the watchmaker, Hans Gruber, of Nuremberg.

Exactly the same mark, only a little larger, is seen upon another watch of the German National Museum of Nuremberg. This watch, however, is much larger than the former, and is a so-called "saddle watch." It has already brass plates, and is generally worked much better than the former, which shows that it has been made later; if the former was made between 1510 to 1520, then the latter was made between 1550 and 1560. So much concerning the invention of watches and the oldest known watch. We pass now to the Marsfels collection, and begin with the elongated octagonal egg-watch, shown in fig. 1. It has a case of rock crystal, and is in an excellent state of preservation. The handsomely engraved bronze dial contains only one, the hour hand; the balance is still without spring; its two arms strike in the indicated manner against bristles. But the movement contains already the fusee, which is connected with the barrel by a cat-gut. Although the fusee was used in house clocks as early as 1510, it was introduced in watches only in 1560. To judge from several minor points, this watch was made about the year 1570.

Another round silver egg-watch is of a similar style and construction. Its balance bridge is like the preceding—a long oval, and is especially remarkable for the stylish and extremely tasty and delicate engraving. The balance is also of iron, and contains only two arms, but has neither spring nor bristles, and no provision for regulating.

It contains a fusee already, and 1600 may be about the time of its manufacture.

In another piece we recognize the true egg-shape, because the silver case of this watch is exactly of the size and shape of a small hen's egg, and shows that the old masters understood how to combine beauty of form with the greatest strength. Above the silver dial with Roman figures is a second cover, which has a second opening in the center. In the second, again, is fastened a glass by means of screws, through which is visible dial and hand. The watch is for better protection provided with another equally oval case. The movement itself is like the above-mentioned, except being more oval. The maker has expended much work upon this watch, especially the balance bridge, which consists of two parts—the foot and the actual covering plate united to the latter by a pin. The two-armed balance, only 11 millimeters large, is of iron, and has no arrangement for regulating. This provision is found only in the very oldest watches.

The following circumstance gives an idea of the extremely careful work on the case: At the beginning of the Thirty-Years' War, it was, together with a number of trinkets, money, etc., hid in a well, from which it was recovered only last year. Although the silver double case was almost entirely corroded, nevertheless, only a few small specks of rust were found about the movement. It is rather difficult to state the age of this watch, but we will not go very far astray, crediting it to the year 1590.

A very interesting piece of the collection is the bronze, fire-gilt



FIG. 2.

egg-watch case, shown in No. 2., which according to all appearances once contained an automatic striking-work, which by some unfortunate occurrences has been lost. It may safely be assumed that this case is made from only one piece of bronze, hammered or chased into an octagon shape. No soldering or other place is seen anywhere showing a connection. On the sides, the case is highly ornamented and perforated, in order to make the sound of the gong more audible. As is shown in the cut, the back is ornamented fancifully by pierced and engraved handwork. The front side is provided with a glass of rock crystal, and inserted into the notched bezel as firm as a rock, so that one would think it was intended to last for all eternity. The closing of the case is quite original and simple, although highly practical, consisting of an eccentric disc contrivance. It may appear as rather startling that these old watches were at this early date provided with a striking train, while the repeating watches, which are quite similar in construction, were invented as late as 1676, by an English divine, Mr. Ed. Barlow.

The bronze case of another egg-watch is gotten up still more lavishly and gorgeously, and may really be regarded as a pattern of diligence and skill. This case, ornamented in the best and purest style,

is also made of a single piece of bronze; its round shape is broken by eight grooves, and fashioned with the hammer, its sides being pierced and engraved (*repereé*). The pendant button, especially, is worthy of being called one of the handsomest pieces of workmanship we have ever seen. The whole case may indeed be considered a pattern for imitation for all future ages. It was constructed probably in the beginning of the XVIIth century.

(To be Continued.)

Practical Hints on Optics for Skilled Opticians.

[EDITED BY C. A. BUCKLIN, A. M., M. D., NEW YORK.]



WE WILL now continue the consideration of Carter's article on Muscular Asthenopia.

We consider this article quite fully because it represents the views of an extremist which are in opposition to the generally accepted views.

In dealing with this piling up of hypothesis upon hypothesis, this continued postulation of something to explain something else, the chief difficulty is to select among the many objections which oppose themselves to the acceptance of Von Graefe's doctrine. In my own case, this difficulty is enhanced by the consideration that I have never seen any non-squinting asthenopic patient who seemed to me to require tenotomy of the externi; so that my knowledge of the operation is practically limited to cases in which it has been long without beneficial effect by some one else. As far as I am aware there is no other instance in which abductor muscles have been supposed to present impediments to the ordinary range of movement of unparalyzed adductors; and there is no other instance in which it has been proposed to divide an abductor or an extensor muscle as a means of relieving the weakness of its assumed antagonist. The affection called "scrivener's palsy," may, by a trifling stretch of imagination, be described as an "insufficiency" of the flexors of the thumb and fingers; but I have never heard that division of the extensors has been suggested as a possible means of treatment. As soon as the ordinary range of movement of any set of muscles is exceeded, their antagonists come into play as inhibitory structures; but within the ordinary range the antagonists exert no such influence.* Acrobats of the class called contortionists differ from untrained persons in the degree in which the opponency of antagonistic muscles has been overcome by stretching; but no such stretching is needed until the limits of customary movements are overpassed. An acrobat, who can allow his feet to separate until his perineum touches the ground, has overcome by exercise the natural rigidity of the adductor muscles of his thighs; and, in like manner, a person who could perform adduction of the eyes until the corneæ became invisible, would have overcome the natural rigidity of the externi. It is clear, however, from all analogy, that the natural rigidity of the externi does not come into play as an inhibitory power within the limits of the ordinary movements effected by the interni; that is, for example, within the limits of the customary adduction of either eye in looking to the right or to the left with both. The assumption that volitional visual convergence can be impeded by the preponderating strength of the externi is likewise opposed to all analogy; for there is no other instance in which the strength of a muscle interferes with the free use of its antagonist. We never hear of an athlete whose flexors are so strong that he cannot extend his limbs, or whose extensors are so strong that he can not flex his limbs. Even the showman's

* My experience is that the division of an antagonizing muscle increases the power of the opposing muscle to such an extent that it may be readily measured by prisms.

Scrivener's palsy is treated by the use of artificial elastic appliances which favor the weak muscles, which is about the same thing.

little dog, whose tail was so tightly curled that he could not put his hind legs to the ground, would be a less strange phenomenon.† The convergence required for fusion, if impeded by the externi at all, can only be impeded by some condition analogous to spasm; and liability to spasm is characteristic of weak muscles rather than of strong ones. My attention was first called to the relation between the convergence function and sustained vision by the writings of Dr. Scheffler, and in the *Practitioner* for 1874 I published some papers on the hygiene of vision which indicated some divergence from the generally accepted view. In consequence of these papers Dr. Theobald, of Baltimore, was good enough to send me a copy of an essay of his own, which had appeared in the *American Monthly Journal of the Medical Sciences* for the preceding January and in which he discussed the value of Von Graefe's tests, and showed, I think conclusively that they would not bear the interpretation, which had been placed upon them. Still later, Dr. Krenchel and Dr. Hansen, both of Copenhagen, have written very lucidly upon the question of insufficiency; and I believe it must now be generally conceded that Von Graefe's fabric of postulates has been overturned. The difficulties in the way of sustained convergence, whatever they may be, are certainly not due to "insufficiency of the interni" and cannot be rationally treated by tenotomy of the antagonists. . . .

I assume, therefore, that insufficiency of the interni is a condition which has no real existence, that all unparalyzed interni are strong enough to maintain convergence to fifteen inches and that the difficulty sometimes experienced depends either upon an excessive convergence demand, as in a myopia which brings the far point much nearer than fifteen inches, are all that will be required; and in the latter, taking the convergence distance as a fixed point, it is only necessary to vary the accommodation demand by lenses until the harmony between the two functions is restored. By this means we may, in many cases, relinquish the use of prismatic spectacles and may cure our patients by glasses which are everywhere procurable.

Dr. Hansen has pointed out that besides these cases of somewhat high degree of myopia we have apparent insufficiency in other conditions. In emmetropia, in hypermetropia, and in minor degrees of myopia, we find a few persons who preserve the parallelism of their eyes in testing equilibrium for distance, but in whom an excluded eye (as by Von Graefe's first test) becomes divergent at reading distance. If the divergence is small it means that the relative play of accommodation and convergence is large so that fusion being suspended convergence cannot be maintained unchanged by accommodation alone. If the divergence is large it means that the normal relation between accommodation and convergence does not exist; so that, although fusion produces convergence, accommodation without fusion cannot do so. In such cases the severance between accommodation and convergence is due to congenital or acquired central defect. He describes yet another form in which there is the normal relation between accommodation and convergence, with absence of fusion. In these cases, which are also due to central defect, he describes as symptoms an exceedingly defective endurance, alternating with diplopia, as small divergence at reading distance and feeble adduction and abduction. Since I have been made acquainted with Dr. Hansen's views, I have been on the watch for one of these two kinds of central defect, but I have not at present clearly identified either of them. Dr. Hansen's description of them is exceedingly graphic and he speaks favorably of prismatic glasses as means of affording relief. Putting aside these instances of central defect, which are few in number, and which certainly require a more careful examination than they have yet received, our plan of dealing with a case of asthenopia should be in the first instance to determine and to correct any obvious ametropia or astigmatism, even if only of small degree. If the symptoms are still unrelieved we have next to consider whether accommodation and convergence stand in their normal relation to

each other, and if not, how these relations may be favorably modified. Wherever there is sufficient range of accommodation the change should be made by altering the accommodation to meet an invariable convergence requirement—stronger convex or weaker concave lenses called for less accommodation; stronger concave or weaker convex lenses for more. Sometimes when the range of accommodation is very limited this simple plan must be laid aside, and the convergence must be modified to suit the accommodation. Prisms with their bases inwards diminish convergence; prisms with their bases outwards increase it.

When we employ prisms with their bases inwards to diminish convergence effort there is always some to weaken the interni by diminished use, and in such cases it is generally prudent to use also prisms with their bases outwards for a few minutes at a time, and at regular periods so as to strengthen the convergence muscles, as if by gymnastic exercise. A convenient measure of the strength of the interni, by which they can be tested at any time, is furnished by their power to overcome the artificial diplopia produced by prisms with their bases outwards when the eyes are directed to a moderately distant object.

In asthenopia of great severity or of long standing, even when we have corrected every discoverable ocular defect and have brought the accommodation effort and the convergence effort into harmony, we shall sometimes find that the use of the eyes is as painful or difficult as before. For a time this will be so in many cases and it is well to warn patients that their glasses will call upon their eyes to work under new conditions which, although better than those which they supersede, may yet be irksome so long as they are new. We must not therefore expect immediate relief as a rule; and it is best to insist upon diligent use of any prescribed glasses for at least a fortnight before we attempt to form a definite opinion about their probable efficacy. After the lapse of that time if the patient is still complaining and if we are sure that we have placed the ocular mechanism under the most favorable attainable conditions, we have next to develop the powers of this mechanism by carefully regulated exercise. We often have to deal with the effects of that most pernicious of all recommendations, the recommendation to "rest the eyes," and consequently with organs of which the whole nervo-muscular apparatus has been brought by disuse into a state at once of debility and of excitability. Such conditions can only be relieved by careful strengthening of the weaker muscles; and for this purpose the employment of the eyes must be so regulated as not to impede nutrition by occasioning fatigue. The indications for the fulfilment of the required conditions were first clearly laid down by Dr. Ezra Dyer, of Pittsburgh, whose rules for this purpose have proved so useful and their value has been so thoroughly established by experience that in the U. S. the process is commonly called "Dyerising." Dr. Dyer first corrected any hypermetropia or astigmatism and generally prescribes such glasses as will place the eyes under the most favorable optical conditions. The remainder of his instructions I will give in his own words, which on this side of the Atlantic are not so well known as they deserve to be:

"The exercise of the muscles is best accomplished by reading. The patient is directed to select a book of good type but not too absorbing, and to read regularly with the prescribed glasses three times a day. He must determine by trial the number of minutes he can read without discomfort. He may find this to be thirty seconds, five minutes, ten minutes, or even more. He must, however, find this initial point. Starting at this point he must read regularly and always with the glasses. The first reading must not be until one half-hour after breakfast, the second at noon, the third finished before sundown. The periods of reading must be regularly increased from day to day. No other use of the eyes should be allowed.

In cases where discomfort occurs in less than five minutes, the increase should not be more than one-half minute per day until ten minutes are reached. In other cases the patient may increase one minute each day, until he can read thirty minutes three times a day

†It however remains a fact when the interni are too weak to produce abduction easily, division of the externi enables the interni to do what they could not do before.

without pain; If this can only be done with pain the patient must be encouraged to persist, notwithstanding the pain; the surgeon, however, exercising his judgment in not pushing the treatment too rapidly. Should the pain continue from one period to the next it is evidence that he has gone beyond the maximum of his ability, and that he should fall back to a period at which he can read without discomfort, should regard that as a new point of departure and proceed as before. As said above, reading is the best exercise; but it frequently happens that the patient is very desirous to read or sew.

This may be attempted when thirty minutes has been reached in the middle period. After the exercise has begun by reading ten minutes, sewing or writing may be tried for ten minutes, and the period finished by reading. From this point I permit an increase of ten minutes a day and a relative increase in the time of writing. This may be gradually introduced into the morning and evening period. I do not consider the treatment completed until an hour and a half is reached.

I have found it of great assistance to explain the rationale of the treatment to the patient. These cases rarely occurring except in the educated classes, they readily understand their nature and are anxious to assist the surgeon. I tell them that in reading pure muscular action is required as much as in lifting a weight; that through want of use, debility or some derangement of the system, they have lost the power to exert the reading muscle without fatigue; that they can strengthen this muscle and increase its power of endurance by regular, constant and systematic exercise as well as with any other muscle in the body.

The course of treatment serves to distract the mind of the patient and restores his confidence in his ability to use his eyes. He has become discouraged; he has had the horror of blindness carefully instilled by friends, and sometimes by well meaning physicians who, not feeling quite sure of their ground, err on the safe side and prescribe entire rest. In these cases "the safe side" is the wrong side. When the glasses are procured and the patient is assured that there is no absolute disease of the eye as revealed by the ophthalmoscope, he commences his course of treatment with hope and zeal. The mere fact that he is told that he *must* use his eyes, gives him, to a certain extent, the power to do so."

Dr. Dyer, elsewhere, lays great stress upon the importance of restraining impatience when improvement is beginning to be declared. The patient who finds that he can read for ten minutes without distress is very likely to go on for twenty minutes, or until pain warns him to stop, but to do this is to invite relapse. With an increase of only one minute a day the duration of the treatment would be about three months, and it is better to submit quietly to this period of modified use and of self-restraint than to lose time at the beginning by fruitless endeavors to hasten a process which depends essentially upon the gradual improvement of muscular nutrition.

In many obstinate cases of asthenopia we shall find some derangement of the health or some need for better regulation of the regimen and habits. Under such circumstances the ophthalmic surgeon, if he should be so unfortunate as to be in the narrow sense a specialist, must call to his aid the advice of the general physician, and must not expect to render unnecessary, by the employment of spectacles, all the other resources of the healing art. When debility of the ciliary muscles and of the interni is a consequence of debility of a more general character, the condition of the eyes may, indeed, often be greatly improved by treatment specially directed to them; but complete functional restoration is hardly to be hoped for except in conjunction with a corresponding degree of improvement in the state of the organism as a whole.

The School of Optics will re-open January 15th, at two o'clock, P. M. Those desiring a place in this class should apply early. For further particulars apply for catalogue. It will soon be found impossible to retain in any city an optical trade unless it is protected by some one who has a thoroughly practical knowledge of optics.



[FROM OUR SPECIAL CORRESPONDENT.]

CHICAGO, NOV. 20, 1888.

Now that election talk has become chestnutty, the jeweler is turning his thoughts towards holiday money-making; his harvest is ripening, and the increased activity noticed during the past fortnight in the warerooms of all the jobbers here indicates that the retail jeweler is awake to the necessity of active buying and energetic preparation.

The size of his bank balance January 1 will be in exact proportion to his brainwork and handiwork. The Chicago retailers are just beginning to work nights, and long after their doors are closed master and servant, each in his shirt sleeves, can be seen through the chinks in the drawn curtains hard at it; old stock is re-brightened and changed about, and sandwiched in between more recent purchases. The new things are unpacked and effectively placed with due regard for the *ensemble* effect.

All this requires time, patience, thought and work; nothing of value comes hap-hazard and a few observations may not be amiss. First, the old things must look new and inviting. "Accomplish this seeming impossibility," said a wide-awake retailer here, "with new tags, re-trimmed or new trays, and the numerous inexpensive cases and jewelry fixtures to be found with any of our jobbers." Nothing save ancient relics and wine improve with age, and the sooner merchandise changes into cash the better; take a first loss on any old article rather than next to nothing, when its wrinkles and antediluvian appearance render it of no use at all.

Let your show windows typify the wide-awake energy of the proprietor. Change them constantly, and as constantly add new features to their attractiveness. A Chicago firm has just spent \$200 for embroidered cashmere draperies in delicate tints and short lengths. On these, placed in their windows with studied carelessness, are arranged in turn all the various articles of their stock, either loose or in boxes of all shapes and sizes, lined in the same tints as the cashmere. On one day these windows seem a harmony of jewels and the foamiest of sea green; on another a shade betwixt terra cotta and a sea shell pink; another day lavender will hold sway, and so on in a seemingly endless series of kaleidoscopic transformation scenes which impress every passer-by with the idea that the genius of that firm is providing for their customers every latest novelty, and all the various conceits and caprices of Dame Fashion.

As a matter of fact, Joseph & Fish, whose flourishing State street establishment is referred to, do not carry a stock as large as some other houses in the trade, but their enterprise, so strikingly exemplified, attracts custom, and produces a rapid "turning over" of their stock, which means money making.

Mr. C. D. Peacock is another of those merchants whose palace of trade shows daily change in the arrangement and display of plate and jewels. To-day a collection of *nouveautés* will be shown on a background of pink silk plush, and to-morrow the color changed to purple or cardinal will give a new tone to the exhibit. Mr. Peacock's fifty-one years of experience has but sharpened the keen edge of his enterprise and every detail is watched. "Never show all your Christmas novelties in advance of their demand," is Mr. Peacock's advice, "especially if the articles have noticeable size or character—show this new thing for a few days, then add another, and impress on your customers that they can always be sure of seeing some late novelties whenever they pay you a visit."

Giles, Bro. & Co., who are diagonally across the street, furnish another example of the value of thoughtful care in store arrangement.

True, not every jeweler can afford wall cases and ceiling of hand-carved oak, decorated in gold leaf, but there are other little items so inexpensive as to seem trivial which cut a large figure in the year's receipts and prosperity. Odd shapes and quaint styles of jewelry boxes often add attractiveness to a ring or brooch and influence its sale. Spotlessly white tissue paper will add brilliancy to the gem fastened upon it, and fresh clean cards for the general stock make even an "old timer" seem a fresh arrival.

After General Sheridan, who was so especially well known and loved here, went to his long home, many hundreds of his admirers stopped at Matson & Co.'s windows to admire the life-like bronze equestrian statuette of "Little Phil," and so thoroughly has Mr. Forman, of this house, realized the importance of painstaking arrangement of stock, that even when acting as the receiver of the estate after Mr. Matson's death, he contrived, without adding any new goods, to so brighten up and distribute the old stock as to give it an appearance of newness to it not equaled in the firm's palmiest days.

Mr. H. A. Spaulding, who is at the head of the corporation that has now taken possession of the Matson premises, has arrived from Paris, and is actively at work preparing for the holiday trade, and the transformation of the great store which is to follow as soon as the Christmas rush is over. Mr. Edward Forman, who is associated with Mr. Spaulding in the management, has returned from New York with many new purchases.

The largest single importation of diamonds ever brought over for a Chicago house was taken out of bond in New York the other day; it would have added to Chicago's fame as a jewelry distributing center had it come through to this city in bond, but none the less does its value—some \$85,000—furnish a verification of what your observer stated last month in speaking of the magnitude of the facilities, enterprise and experience of the new firm of Spaulding & Co.

Referring again to jewelers' fixtures and store attractions, it will profit every retailer who reads these observations to send their address to Dennison & Co., 109-111 Wabash avenue, Chicago, with a mention of THE CIRCULAR. They will receive by return mail a twelve page pamphlet descriptive of show case fixtures, trays, new devices, etc., worthy of the careful perusal of all in the trade.

Again, before dropping this matter for other trade gossip, it will interest those jewelers not having yet seen the unique turnstiles now made by the Waltham Watch Co., to ask their jobber to have one sent for their approval. It is a striking window attraction and shows in a most practical manner the influence of magnetism on ordinary watch movements, and how wholly this influence is counteracted in their non-magnetic watches. The stile turns every fifth of a minute, and alternately places first one movement and then the other over the poles of the magnet. The old style watch is stopped as often as it comes over the magnet, while the non-magnetic one is undisturbed.

The printers of Chicago reap a deal of business from the jobbers of jewelry. At least a dozen large and costly catalogues have issued from the press since your last letter. Benj. Allen & Co. have 720 pages in their volume; Otto Young & Co., Lapp & Flershem (issuing their nameless), B. F. Norris, Alister & Co., F. E. Morse & Co., F. E. Morse & Son, A. Hirsch & Co., E. V. Roddin, E. W. Burchard & Co. and others, have each sent out handsome books.

F. E. Morse & Co. have been appointed the western agents for the Trenton Watch Co.

The sterling silver and silver plate trades are each thriving, and those who think either of these industries on the decline are not posted. The Gorham Mfg. Co. find it difficult to maintain the completeness of their stock, and their sterling novelties come in and go out with equal rapidity. Simpson, Hall, Miller & Co. are kept hard at it to fill all their orders, and report November trade in excess of a year ago. Manager Burchard, the genial representative of the Chicago end of the above firm, is also one of the prime movers in the Chicago Jewelers' Association. The collection department,

recently added, is working to the entire satisfaction of the trade, protecting both jobber and retailer alike.

The Chicago Horological Institute have changed their location to a much finer and larger room, because from the number of applicants they feared that the room they had in view might prove too small. Everything looks very flattering, so the managers state. The plant will be perfect, and it is hoped the school will be appreciated enough so that it can be made a "National Institution." The instructors will be the best to be had; the lathes used will be the "Mosely and Whitcomb" complete, with every attachment and device made to be used on them. Each student will be thus equipped and made familiar with their use. Draughting will be taught, and arrangements have been perfected for weekly lectures by experts from the factories in the various departments. It is the intention of the officers of the institution to spare no pains to make this a thorough and complete school of the horological art. The institute is ready for students; the benches and lathes are now in place and the institution seems destined to fill an important place in the watch world. Forty Mosely lathes are included in their outfit.

The Western Silver Plate Co., of 54 Madison street, are working day and night on holiday orders. Their specialty is the creation of extreme novelties of moderate cost. Every dealer can do himself a good turn by sending for their catalogue, which illustrates some taking novelties now having an especially large sale.

C. H. Knights & Co. are among the most content of all our jobbers. Their six travelers, who cover a stretch of territory bounded by Ohio and the western limits of Colorado, and reaching from northern Dakota to the cotton fields of Texas, are all sending in increased orders which, with "duplicates" and "house orders," are proving an effectual prevention of indolence among the thirty or more employees.

Dakota credits receive most careful scrutiny from all our conservative jobbers by reason of the exemption laws of that territory. With \$1,500 in real estate and \$1,500 in personal property, all exempt from seizure and the claims of creditors, the Dakota jewelers must be as free from suspicion as Cæsar's wife, or he won't get credit from the closest selling jobbers.

The umbrella is cutting quite a figure with the jewelers. C. H. Knights & Co. and other jobbers report many sales and frequent re-orders for this staple commodity. Mr. Knights says that his sales of gold and silver-headed silk umbrellas frequently number a hundred in a single day.

The Waterbury Clock Company report a big trade throughout the whole Northwest, and when asked concerning Dakota credits, replied that despite the short wheat crop their sales and collections were as satisfactory there as anywhere.

M. Horwich, a retail jeweler at 527 Milwaukee avenue, has quit the business. It would be money in the pockets of a dozen of Chicago's jobbers had he never begun. Stein & Ellbogen miss him \$375 worth; M. A. Mead & Co. miss \$900; W. A. Burroughs wants \$200; the Meriden Silver Plate Co. are \$125 out; the Ansonia Clock Co. about the same; C. F. Wittstein & Co. are \$500 poorer through Mr. Horwich's disappearance; and he also forgot to settle with A. H. Smith & Co. and several others. The total of his shortcomings will foot up \$6,000, and when a chattel mortgagee, whose claim of \$300 fell due a fortnight since, called, he found nothing and nobody save one iron safe too heavy for quick realization. Among Horwich's creditors is Mr. H. Dyrenforth, who has recently lost a favorite son through diphtheria.

The American Silver Company, of Chicago, has been incorporated. Capital stock, \$25,000; incorporators, Josiah J. Hair, Richard B. Twiss and Charles A. Warren.

Articles of incorporation have also been issued to the Chicago Watch and Case Co., with a capital of \$10,000. W. A. and M. M. Maye and E. G. Oder are the incorporators.

Mr. Kelly, of the Rockford Silver Plate Co., has substantial rea-

sons for his faith in Harrison and Morton; thirteen orders received by this company on one day of this month, eight of which were to be cancelled if protection was defeated.

The Geneva Optical Co., at 51 Washington street, are being kept very busy expressing holiday specialties in their line to the leading retail jewelers of the whole Northwest. Opera glasses are in special demand, and a list of the many other articles suitable for Christmas trade and all the year round, will be mailed to any subscriber of THE CIRCULAR on receipt of a postal.

The American Fat Stock Show, Horse Show, Dairy Show and Poultry show, now making a combined exhibit in our Exposition Building, is a center of attraction for visiting jewelers, and the excursion rates on all the railroads have saved them not a few dollars.

Prominent among this month's list of buyers at this market were:

D. J. Ayers, of T. R. J. Ayers & Son, Keokuk, Ia.; H. J. Young, Joliet, Ills.; A. H. Bell, Fulton, Mo.; J. W. D. Shottle, Pella, Ia.; L. W. McArthur, Streator, Ills.; W. Coles, Crown Point, Ind.; J. S. Blecken, Nunda, Ill.; R. L. Peabody, Wichita, Kans.; H. Hicks, Mokenee, Ills.; J. H. Rowe, Buchanan, Mich.; Thomas Hamrah, Belvidere, Ills.; S. W. Wadsworth, Beatrice, Neb.; J. H. La Perle, Vandalia, Ills.; D. E. Carter, Travena City, Mich.; J. F. Ingalls, Waukegan, Ills.; Stubbs & Ramsey, Stryker, Ohio; J. R. Losey, Plymouth, Ind.; A. C. Bing, Bessemer, Mich.; E. L. Hall, Green Bay, Wis.; Wilbur & Peterson, Galesburg, Ills.; J. C. Miller, Marshalltown, Ia.; O. Rose, Crown Point, Ind.; W. Keck, Muskegan, Mich.; J. C. Strickland, Keosauqua, Ia.; H. H. Bisbee, Ludington, Mich.; E. L. Hough, Ypsilanti, Mich.; J. C. Woelfle, Peoria, Ills.; Norton & Butters, Kansas City, Mo.; M. Pierik, Springfield, Ills.; W. W. Houghton, Fargo, Dak.; A. Kuckuk, Shawano, Wis.; S. A. Stevenson, Holland, Mich.; Clark, Giddings & Co., Sterling, Ills.; Walker & Stubblefield, Bloomington, Ills.; J. C. Hardy, Weyanwega, Wis.; A. G. Earle, Colorado Springs, Col.; C. L. Crawford & Co., Springfield, Ills.; A. K. Camp, Milwaukee; L. M. Le Brun & Son, Galena, Ills.; A. Steinau, of the American Jewelry Co., Cincinnati, Ohio.

THE CIRCULAR'S OBSERVER.



President, HENRY HAYES.....Of Wheeler, Parsons & Hayes,
First Vice-President, JOSEPH B. BOWDENOf J. B. Bowden & Co.
Second Vice-President, CHARLES G. LEWISOf Randel, Baremore & Billings.
Third Vice-President, JAMES P. SNOWOf G. & S. Owen & Co.
Fourth Vice-President, ROBERT A. JOHNSON.....Of Celluloid Enamel Co.
Secretary and Treasurer, WILLIAM L. SEXTON.....Of Sexton Bros. & Washburn.

EXECUTIVE COMMITTEE.

GEO. H. HOUGHTON.With Gorham Mfg. Co.
WM. H. JENKS.....With Tiffany & Co.
A. A. JEANNOT.....Of Jeannot & Sheibler.
GEORGE R. HOWE.....Of Carter, Sloan & Co.
WM. BARDEL.....Of Heller & Bardel.
J. R. GREASON.....Of J. R. Greason & Co.

At the meeting of the Executive Committee, held on Friday, Nov. 2, there were present President Hayes, Vice-Presidents Johnson and Lewis, and Messrs. Jeannot, Houghton, Jenks, Howe, Greason and Sexton.

Requests for changes of beneficiaries were granted to six members.

The following were admitted to membership: Edgar L. Hall, Waltham, Mass., recommended by E. C. Fitch; Edward E. Harned, Philadelphia, Pa., recommended by Clement Weaver; Chas. R. Kelsey, Omaha, Neb., recommended by Adolph Meyer; C. S. L. Lort, Philadelphia, Pa., recommended by W. A. Weidersheim; Thomas J. Wilkinson, Lincoln, Neb., recommended by J. B. Trukey.

The next meeting will be held Friday, December 6, 1888.

The Table Roller.

[BY MORITZ GROSSMANN.]



THIS is the name of a fork and roller action which has been employed more than any other. The greatest part of the English and Swiss lever watches have the table roller. This roller is a disk of steel, carrying the impulse pin. The part of its circumference next to the pin is filed out a little to form the "passing-hollow."

The fork has on its extremity a notch to receive the impulse pin, which must pass through it freely and with a little shake. The safety action is effected in the English watches by an upright pin (guard pin) projecting from the surface of the lever, very near the bottom of the fork and corresponding to the passing-hollow in the roller, which allows of its passing the center line. During the free vibration of the balance, the guard pin stands at a very little distance from the roller edge. The Swiss escapements have instead of the guard pin a projecting edge on the lever, near the bottom of the fork.

To complete the safety action, which would be rather deficient at the time when the impulse pin leaves the fork, the latter has two horns projecting beyond the acting edges. The inner sides of these horns, or the sides turned toward the impulse pin, are formed by two eccentric circles. The impulse pin, when the lever is resting against the banking, passes these inner circles at a very little distance, thus preventing the fork from falling back to the other side until the guard pin is safely out of the passing-hollow.

The edge of the roller must be carefully rounded and polished to reduce friction to the smallest possible amount in those cases when the pallet may happen to leave its place of rest.

The edge of the roller ought not to extend beyond the circle of the impulse pin more than is required for making a hollow deep enough for the passage of the guard pin. An unnecessarily large disc causes the guard pin to travel farther than the proper arc of escapement action, in order to get safety hold, thereby causing a run of the wheel teeth on the locking faces.

It may be here observed that the form of the impulse pin has been variously made, though it is of the greatest importance to give it a good and proper shape.

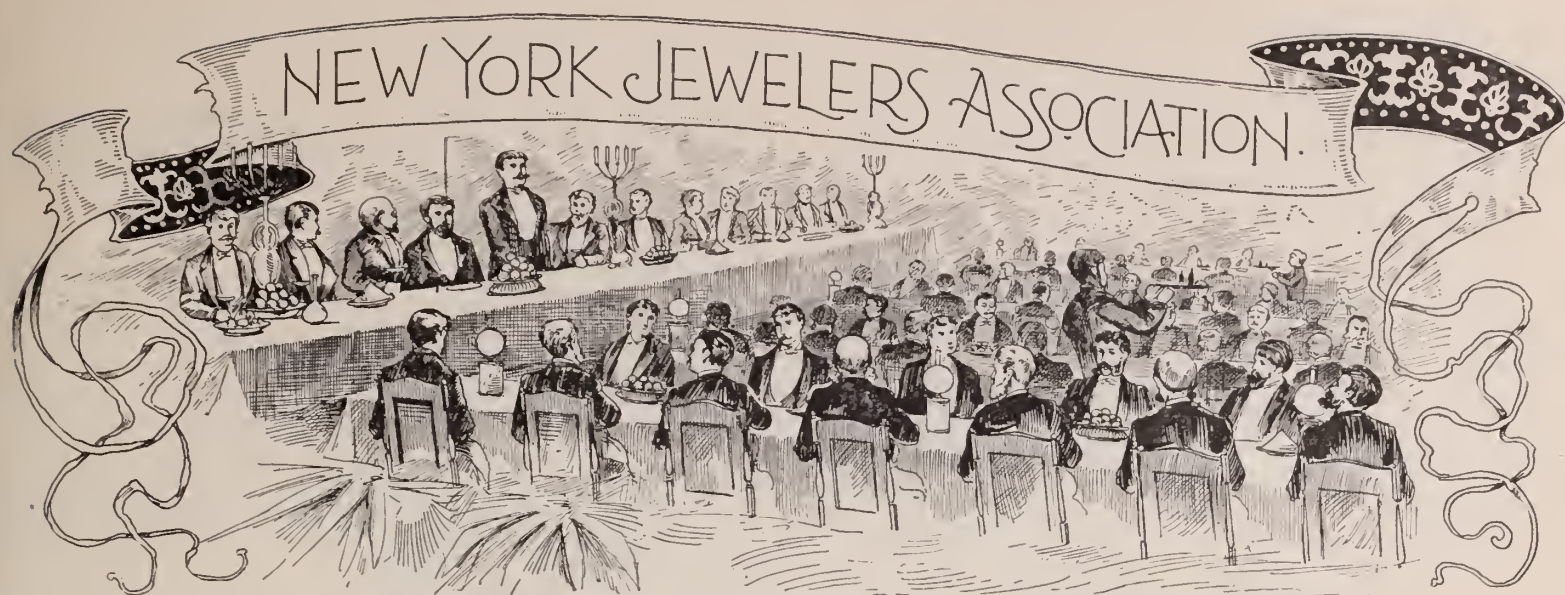
In many English watches we find full cylindrical pins, which is decidedly a very bad system. A cylindrical pin will not admit an advantageous transmission of movement; one consequence of this is a loss of power, both in the unlocking and in the lifting action. Beside this, it is a source of other irregularities, the pin very often touching the bottom of the notch in certain positions of the watch, if the watch is not very deep and if the pivots of anchor and balance have much shake in their holes.

In many Swiss watches the impulse pins have an elliptical form, which is much better than the cylindrical form.

A cylindrical pin, flattened down one-third of its diameter, is very appropriate for economically transmitting the moving power without any loss by useless drop.

The triangular form of the impulse pin is also very good, and admits, as well as the preceding, of the most profitable application of the moving force. Yet it may be observed that the flattened cylindrical pin is stronger, and consequently may be expected to oppose a greater resistance to the shocks it has to sustain when striking violently against the bankings.

WATCH FACTORY IN WARSAW.—In consequence of the very high tariff on watches and parts entering Russia, a Russian Company has been organized for the manufacture of watch parts. The factory will employ several thousand workmen, and stand under the superintendency of Swiss horologists. A committee has been sent to Switzerland for the purchase of the machinery and tools of a watch factory, to be transported to Russia. Independent of this another factory is about to be erected for the manufacture of the entire watch.



Fourteenth Annual Dinner of the New York Jewelers' Association.

DELMONICO'S, NOVEMBER 15TH, 1888.

ELDOM, if ever, does Delmonico's present a more attractive appearance than on the occasion of the annual banquet of the New York Jewelers' Association, and Thursday, November 15th, the celebration of the fourteenth anniversary, was no exception to the rule. The walls of the big banquet hall were gay with bunting and patriotic symbols, and the long tables bore, in addition to their pinnacles of fruit and favors, the usual masterpieces in silver of the art of Tiffany, interspersed between vases of red roses that "like tall silver-buskin'd nymphs" blushed in the faces of the guests and mingled their delicious perfume with the



odors of delicate viands and wines pressed under other suns than this.

The banquet was prefaced by an hour of general hand-shaking and congratulation in the parlors of the establishment, after which the members and their guests filed into the banquet hall two by two, fortified for the ordeal, no doubt, by noonday abstinence. When all were seated in the places which had been assigned them, the waiters advanced to the attack laden with such delicacies as Delmonico alone provides. For two hours the merry war went on, the hum of conversation being broken by an occasional burst of laughter that marked the spot where some wine-warmed wits were popping jests to appreciative listeners. When a truce had been declared with Bacchus the faces of the feasters were upturned toward the speakers table to hear what of wit and wisdom those genial philosophers had been able to extract from the good things of which all had partaken. The smoke of fragrant Havanas rose like incense from the tables, a "burnt" offering to the spirit of the hour. Politics and religion, those fertile subjects that will persist in bobbing up whether at feasts or funerals, and jewelry too, were all treated in an entertaining manner, by the after-dinner orators, and as a seasoning to the intellectual after-course, there was enough of that patting on the back and give and take that professional men love to indulge in out of school to keep the hearers in continual good humor. Some very good sparks were struck out in the clash of wit, and some very wise admonitions

were given to the audience to take home with them as souvenirs.

The scene was strongly suggestive of one of those descriptions of feasts which are to be found in the old Greek poet, Homer, "an equal feast," the full satisfaction of which, with the noble and soul-stirring oratory that always followed, is admirably expressed by the climax: "nor did the *soul* lack anything." All the appetites and desires, physical and intellectual, found there complete satisfaction. The Jewelers' dinner was indeed "an equal feast;" the provision was abundantly equal to the wants of the most fastidious of epicures, and the partakers thereof, it must be said, were fully equal to the emergency. Altogether the occasion was one of unalloyed pleasure, no incident having occurred to give a moment's regret, except the unavoidable absence of some favorite speakers whose post-prandial oratory has a flavor rarer than Delmonico's wines, and the tinge of sadness that always comes with the thought of once familiar faces now lost to earth. Happy will those who participated be if from that hour they can take their temper for the year.

"Laugh and grow fat," is an adage Americans in general are just beginning to learn the truth of, but for fourteen years the New York Jewelers' Association has been engaged in pioneer work in this very cause of good cheer and good fellowship. Nor has the interest flagged. From year to year the same anticipation has been followed by the same agreeable recollections, and to-day in its social aspects the New York Jewelers' Association stands as a worthy example for other mercantile organizations to imitate.

At the table of honor sat President H. B. Dominick, and the guests of the association: General W. T. Sherman, Ex-Judge Noah Davis, Rev. Charles Hall, of Brooklyn, Rev. E. Walpole Warren, of New York, E. T. Bartlett, Charles L. Tiffany, the Nestor of the jewelry trade, and Hon. Isaac H. Bailey—representatives of the law, the pulpit and the jewelry trade.

The members and their guests who occupied the lower tables were ranged as follows:

First table—Ex-President D. F. Appleton, E. G. Webster, A. A. Webster, F. H. Webster, William Riker, Jr., Geo. M. Hard, C. G. Alford, E. J. Scofield, A. B. Lounsbury, Leon Barre, Geo. W. Shiebler, P. K. Hills, Jr., Stephen Avery, Appleton Smith, C. H. Brooker, C. H. Brahe, W. T. Woodruff, Seth E. Thomas, C. M. Cram, J. C. Atwater, W. H. Atwater, A. V. Huyler, N. H. White, Irving Smith, A. M. Crommelin, P. T. Tunison.

Second table—Ex-President Wm. R. Alling, J. W. Senior, F. S. Archambault, M. L. Bowden, E. P. Durando, D. V. P. Cadmus, Henry E. Rood, J. S. Spencer, J. E. Spencer, J. G. Bacon, J. L. White, J. D. Alling, H. S. Cozzens, W. H. Curtis, J. T. Perkins, J. B. Bowden, J. H. Johnston, W. C. Kimball, Walter Cook, C. E. Breckenridge, A. Chamberlain, H. B. Beach,

Henry Semken, Samuel Dodd, Edward Ellis, I. G. Dillon, W. H. Hennegen,
 Third table—Vice-President A. K. Sloan, J. C. Mount, W. W. Wattles,
 J. R. Greason, H. C. Ostrander, J. P. Snow, J. S. Franklin, C. W. Bailey,
 Geo. R. Howe, General Geo. H. Ford, Geo. B. Jacques, C. E. Hastings, R.
 H. Galbraith, J. H. Hart, D. F. S. Forshay, Z. J. Pequignot, C. H. Powers,
 H. A. Crawford, D. H. Buell, W. T. Carter, Clem. Weaver, A. T. Hubbard,
 A. Carter, Jr., R. C. Black, Geo. W. Banks.

Fourth table—Ex-President Alfred H. Smith, Thos. G. Brown, O. Keene,
 L. B. Haff, A. Dominick, Mr. Michel, I. M. Goetschins, B. Dominick, Wil-
 liam Baylis, S. Cottle, C. A. Fowler, M. P. Bagg, J. A. Bennett, H. B. Smith,
 C. H. Crump, Louis Lelong, W. A. Brown, Isaac Mills, Mr. Newell, W. B.
 Lockwood, G. E. Jones, J. H. Shafer, Fred. L. Mix, F. S. Douglas, A. O.
 Headley, C. F. Green, A. C. Titcomb, W. H. Kennard.

Fifth table—Henry Ide, E. P. Ingersoll, C. H. Case, E. S. Smith, W. L.
 Rich, N. Taylor, J. G. Graybill, E. Aug. Neresheimer, A. Wittnauer, A.
 Remick, George Krementz, J. Lebkeucher, Alex. Lelong, C. H. Hancher,
 A. E. Pritchard, Captain J. L. Fowler, R. N. Peterson, N. Geoffrey, J. M.
 Wentworth, Chas. Picksley.

The menu, which was a work of art in every respect, was as fol-
 lows :

JEWELER'S ASSOCIATION.

Huîtres

POTAGES

Consommé, Souveraine

Bisque d'ecrevisses

HORS D'OEUVRE

Timbales, Mentana

POISSON

Bass rayée à la Marguery

Pommes de terre à la duchesse

RELEVÉ

Dindonneaux à la lyonnaise

Tomates au gratin

ENTREES

Mignons de chevreuil à la financière

Haricots verts

Ris de veau à la Montebello

Petits pois au beurre

Sorbet : Regence

ROTS

Canards à tête rouge

FROID

Terrine de foies-gras à la gelée Salade de laitue

ENTREMENTS DE DOUCEUR

Croûtes aux ananas

Gelee aux mirabelles

Cornets Chantilly

Pièces montées

Glace : Fantaisies

Fruits

Petits fours

Cafe

VINS

Graves

Sherry

Pontet Canet

Perrier Jouët

Macon Vieux

Apollinaris

Liqueurs

Le 15 Novembre, 1888.

DELMONICO'S.

About nine o'clock President Dominick called the company to
 to order and made the following address :

ADDRESS OF PRESIDENT DOMINICK.

Gentlemen of the New York Jewelers' Association:—I must ask your
 attention for a moment. I promise to delay but for a short time the feast
 you have in prospect. I feel rather better to-night than at any time since
 the election. Mugwumps have been looking for a warm place and I flatter
 myself, flanked as I am by the stalwarts of the stalwarts, that I have secured
 about as hot a place as can easily be found.

As your president, I congratulate you on the prosperity of the association

during the past year. It has been increased in usefulness and has become
 quite a power in the trade. We have been rapidly recruiting our member-
 ship, but we must remember that the association will not have secured its
 full object until every good wholesale house in the many branches of our
 trade has been enrolled as a member.

We miss from among us to-night our faithful secretary and friend, Mr.
 Henry Olmstead. Mr. Olmstead has been very seriously ill for some time,
 and was at last obliged to withdraw from active work in the association. I
 am indebted to him, however, for the arranging of the toasts which he has
 done so well for many years.

The thanks of the association are due to Messrs. Tiffany & Co., for the
 very elegant silver that adds so much to the decoration of our tables; also
 to the committee that have had charge of the dinner, and last, but not least,
 to our guests who have honored us by their presence. [Applause.]

Gentlemen, the first regular toast of the evening is

*"Our Great Republic: Unparalleled among the Nations of the World
 in Growth, Prosperity and Influence."*

It is with great pleasure that I introduce for the second time to
 this association, a man, who, above all others, is able to respond to
 that toast, General W. T. Sherman.

General Sherman spoke as follows :

ADDRESS OF GENERAL WILLIAM T. SHERMAN.

Mr. President and Gentlemen of the New York Jewelers' Association:—I congratulate you that I did not receive notice of the subject on
 which I was to speak to-night, for if I had heard that before I had got to
 this table, I might have bored you beyond endurance. Now I promise not
 to do so. The subject would take about two or three months, and there-
 fore I advise you to read Bancroft's nine volumes and then we will talk
 about it. I do somewhat flatter myself, however, that I know a little about
 the United States of America, without any preparation or study.

General Sherman then referred to the manner in which the terri-
 tory embracing the various states in the south-west and west was
 obtained by the United States. He sketched briefly the growth of
 the country, ridiculing the idea that it had been at the expense of the
 Indian, or that the land had not been properly purchased. He con-
 tinued :

I assure you upon my honor that so far as my judgment and knowledge
 go, we own every foot of the ground as much as England owns Great
 Britain. Wherever we have taken ground we have paid for it in money.
 Wherever we have taken rights from the Indian we have paid for them.
 All this nonsense about our treating the savages cruelly and inhumanly is
 mere bosh. They were not qualified to settle in Iowa or Nebraska. To
 my personal knowledge they were starving there, too lazy to raise potatoes,
 or corn, or wheat—starving on fertile ground, too lazy to work, willing
 to steal, but having nobody to steal from. Now that is swept away, the
 Indians are gone, the land is cultivated. Where they once were, my
 friend Tiffany now sells his works of art to populous communities, and you
 sell to all the towns of Iowa and Nebraska beautiful works of silver and
 gold and jewels which give pleasure to the young, the beautiful and the
 proud.

My young friends—you all look young—one time about forty years ago, I
 was in the valley of the Uba, and I had an old Spanish muleteer with me,
 and we were ascending from the foot of the mountain. We were creeping
 up a ledge of rocks, and I had a bottle of nitric acid, and we were looking
 for gold. And as we went along we knocked off a little piece of the rock
 here and there, and poured some acid in it and tested it in the usual man-
 ner. After traveling several thousand feet, I got tired and complained to
 the old man. He replied to my fault-finding, as we went up, "for gold, go
 towards the heavens, but for silver to the devil." You who have plenty of
 gold can be happy, but if you want silver, wait and you will get it some
 day. [Laughter.]

Now my friends of this society, I thank you for having given me this
 opportunity of seeing you face to face. If I had been consulted before-
 hand, I might have selected some statistics about the great republic, but it
 is better that I, General Sherman, as I stand here, probably the last of the
 Mohicans, should speak to you generally. I am glad to meet the men who
 do the things. I do not care much about these fellows who talk. I am
 ashamed that I talk so much myself. But for the men who do the work,
 the men who delve in that silver away out in the mountains in California,
 Oregon, Montana, Colorado and New Mexico, and bring things to the sur-
 face, I honor, respect and love them, because they have done something by

bringing valuable material out of the earth. For words are mere mind. They come to-day and to-morrow they go. And you men who work up that silver and gold into things of beauty contribute to the pleasure and happiness of mankind, I take off my hat and bow to you. [Applause.]

President Dominick—Gentlemen, the heat of politics and the inclemency of the weather have contributed to deprive us of some of the speakers we hoped to have with us to-night. The next toast is

"The President of the United States of America."

That was to have been responded to by the Hon. Chauncey M. Depew. Mr. Depew has written that he was unavoidably, at the last moment, detained by pressing business, and is unable to be present with you to-night. In his absence I ask you all to stand and drink to the name of the President of the United States.

After the toast was drunk, the President continued :

We have another disappointment in the absence of the gentleman who was to respond to the next toast. It is hardly necessary for me to say that I have a letter from Mr. Hewitt. The toast is

"The Empire State and Metropolitan City of New York still hold their Prestige."

This was to have been responded to by Mr. Hewitt, Mayor of the city. Mr. Hewitt writes that the inclemency of the weather makes it impossible for him to get out.

Gentlemen, we have an unexpected pleasure in store for us. There is with us a gentleman who did not come here to speak, but who has very kindly consented to do so. I now call upon Mr. A. C. Titcomb, of San Francisco, but now Mayor of Newburyport, Massachusetts. I understand that Mr. Titcomb was elected Mayor unanimously, so they probably had no mugmumps there. Mr. Titcomb will please respond to

"The Sister Cities of the East and West."

Mr. Titcomb spoke as follows :

ADDRESS OF MR. A. C. TITCOMB.

Mr. President and Gentlemen of the New York Jewelers' Association :

As your President has said, I did not come here to speak, and I assure you the last thought I had in mind when I came into this hall was that I should be called upon to address you. But I understand that you are short of speakers, and so I am willing to fill the gap.

I once heard a story of a man who had a dream. He dreamed that he saw a man in the air floating upon a cake of ice, and the man who was dreaming said, "Hello, what are you doing up there?" He said, "I am floating upon a cake of ice." "What is your name?" "My name is Judas." "What," said he, "Judas upon a cake of ice? I thought he was where the thermometer would not tell how hot it was." He said, "yes, I am here, but I attended a banquet when I was upon the earth and somebody made a speech who was not a speechmaker, but I applauded, and the fellow who has charge of affairs here lets me out once a month on this cake of ice."

Now gentlemen, I am not a speechmaker, but I am among those who helped me make what little I have, and I am content. I have met to-night Daniel Appleton, of the American Watch Company. I have sold lots of his watches, and I never lost anything on them. And Alfred Smith, my friend who invited me here to-night; I never lost anything on his goods. And Mr. Neresheimer and Harry Beach that I see over there; and Johnny Mount, and a lot of others. I am here among friends and the greatest friend that we have is that good old soldier General Sherman—God bless him.

I made my fortune in California, but I never would have made it if it had not been for him. He has been one of the preservers of our country—our country which was born of heaven, christened by Columbia, baptized in fire sprinkled by the blood of patriots, consecrated to freedom and to liberty, the star, guiding millions to the shores of liberty, to partake of her free principles, which are as boundless as her great domain, transparent as her atmosphere, clear as the waters of her lakes and rivers, and fruitful as her soil, high as her mountains, and solid as her everlasting foundations, a monument erected by God in commemoration of man's capability for self-government. The army and navy are guardians of her honor, outposts of her territory, made up of men who would die in perpetuation of the heritage of their fathers. These United States, cemented by their blood, covered by the flag whose hues are borrowed from the skies—this is our country, the birthplace of freedom and the spot where liberty dwells. May the Lord

bless and prosper her so long as there lives an American, one who shall revere the name of Washington, of Lincoln, of Garfield, of Grant, of the heroes of the first revolution and of the last great rebellion.

Mr. President, I thank you for the honor you have done me in inviting me to speak before this association, and I say to the Jewelers' Association, God bless you and prosper you. You have helped me in my way upon earth. You have helped me to make my fortune. I have retired from business, but if I ever get an opportunity, I will throw it in your way,—but do not give it away. [Applause.]

President Dominick—Gentlemen, the next regular toast is

"The Ladies (whose absence we deplore). Their Exquisite Tastes and Incessant Demand for Something New Taxes our Ingenuity to the Utmost, and goes far to solve the Problem : How to Dispose of the Surplus of their Husbands and Fathers."

To this toast Mr. Thomas M. McCarter was to respond, but he has been unavoidably detained. We have another good man with us to-night, however, and I will introduce to you Mr. E. T. Bartlett.

Mr. Bartlett responded.

ADDRESS OF MR. E. T. BARTLETT.

Mr. President and Gentlemen of the New York Jewelers' Association :

I really rise on this occasion to a question of personal privilege and explanation. I come here to-night by invitation of your committee, with the assurance that as I had been speaking for sixty days in the campaign, and as they had a full corps of speakers here to-night, I would not be called upon to say anything.

When I arrived in the drawing-room this evening, your president met me and said that General Pryor, of Virginia, who was to respond to "Literature, Science and Art," had failed him, and he wanted to know if I would tackle that toast. I told him it was a little startling, but if he could not get anybody else, I would endeavor to get up and speak to the text. So you can imagine the kind of a dinner I have been enjoying to-night. I have been wrestling with "Science, Literature and Art." But about two minutes ago your chairman said to me, "Bartlett, we have concluded you must respond to the toast of 'The Ladies.'" So now I find myself confronted with that toast. Although at first I felt very much disturbed, I must confess that now I must consider myself very fortunate in having this toast assigned to me, because it is a toast that responds to itself. I shall, therefore, be compelled to say little about the ladies. But I confess that my experience since I arrived here to-night has been a most gratifying succession of surprises.

In this presence I don't propose to say on which side I found my surprise in this campaign. Some of us have been defeated and some of us have not; but we know that one peculiarity of the American people is that when the verdict is rendered, all hands submit to it. Therefore, I suppose that we have entered upon four years more of prosperity, and that we shall go ahead as we have gone ahead heretofore, and in the next election we shall tackle the questions that are presented with the same earnestness as heretofore, and we may come out the same way.

I feel inclined to indorse what General Sherman said to me earlier in the evening. He said, "I have been to a wedding to-day, and I have seen so many pretty girls, that I would rather have my lost youth restored to me than to have marched to the sea." I quite agree with General Sherman in his desire for a restoration of youth.

I regret that some of the fair sex are not here to-night, and I can see from the face of my friend Judge Davis, he is of the same opinion. I can assure you that if the ladies were here, he would not miss them. I think the ladies should be admitted, at least after the coffee is placed on the table, but it seems to be one of the decrees of society that the ladies should not be present on an occasion like this. I think we would be greatly benefited by their presence.

I regret that I have been called upon to appear before you to-night without preparation, and I can only thank you for the great honor you have conferred upon me in putting me in the place that Mr. McCarter was to have filled. As for tackling "Literature, Science and Art," why, of course Mr. Pryor may expect to respond to that toast here next year.

I am reminded of the many years that I have addressed you, and it does seem as I stand here as though there were many who were formerly here that are not present to-night. Many of us fall by the way. Some are left here to pursue the struggle; and when we assemble on such occasions as these, it is no stretch of the fancy if we may imagine that those gone before do look down upon us from the veil of the upper sky, and when we drink our toasts to-night, let us not only drink to the living, but to those who were

of our number years ago, and who have passed on before us. [Applause.]

The President—Gentlemen, the next regular toast of the evening is "*Our Reverend and Faithful Clergy who Teach Us to Use the World without Abusing it.*"

I have the pleasure of introducing to you the Rev. Charles H. Hall.

Dr. Hall spoke as follows:

ADDRESS OF REV. CHARLES H. HALL.

Mr. President and Gentlemen of the New York Jewelers' Association:

General Sherman has made the position very difficult for me. He has told you that he has no opinion of the mere talkers, and as my profession is to talk—not after dinner—I can only reply that whenever the country will give the clergy any opportunity of making such a thundering racket from Chattanooga to the sea and Savannah, we will stop talking and go to work. The toast given is one of singular happiness, because the clergy have very little to spend on the ornamentation of ourselves or our families. In looking at the two clergymen who are now on the platform you will understand that we live up to our teaching in being very careful not to abuse the world in the way of too much jewelry. I don't believe there are many of you who can realize how difficult it is for a clergyman to confine himself to thirty minutes in speaking, and to condense seventeen heads under one or two brilliant points. I confess, although it may be a chestnut to some of you, that I entirely agree with the man who said that everything had a compensation; that in all times of sorrow and affliction, and disappointment and grief, there is compensation—I have not found it yet, however, as to last Tuesday, but I know it will come if it takes four years to do it. But the question was asked of the man who so believed in compensation: "Well, what compensation was there for Daniel in the lion's den?" To which he readily replied: "That is plain enough, for if the programme had been carried out there would have been no after-dinner speech."

But in meditating on the subject it struck me how many men have thought of the dignity of the art of jewelry. The first jewel known was an ornament that a royal man wore upon his throne ages ago, and the art of making many jewels worn long ago was afterwards lost, the workmanship of which rivaled the present ingenuity of your craft. This brings to us the suggestion that perhaps after all, as the Hindoo Brahmins reason, the great vast cosmos works in a circle.

You remember when the temple was to be reared, that God raised up a man and worked upon him as upon a jewel in order that he might do the handiwork of the temple, and when the tabernacle was raised in the wilderness we hear that the spirit was bestowed on Bezaliel, the son of Uri, whose art was as wonderful as the opportunity was rare. And the question has arisen whether the stone upon which was wrought the name of the tribe of Zebulun was a diamond. There was a point in the working of that hard gem years ago that has since been forgotten. Bezaliel taught men by example how to use the world as not abusing it. The church in all ages has done her share to teach the symbolical value of jewels. Many of the ideas suggested by the handiwork of your craft are significant of the fact that he who loved to speak of the lilies of the field, and had sympathy with the birds, also had a profound love for beauty. In the last pages of the word of God, when John on Patmos gathered together in his grand sweeping inspiration the conception of that world of which revelation has been made—where some of your number have gone, and where we all are looking to go—in gathering that grand image of what eye hath not seen, or ear heard, nor hath it entered into the heart of man to conceive of the goodness and generous love of the creator—has he given a more beautiful picture than of that city of the blessed where the streets are of gold and the gates of pearl.

The beginning of your trade, as you will see in India to-day, was probably ages ago. But you will see the same thing there now, and if you will pass up into the country from the shore, you will come to a village, perhaps a tomb, with its magnificent opulence, a wonder of the world even yet. The admiration of all civilized ages where architecture and the working of stones and gems and rich metals have reached a point of astonishing beauty. In that country you may see a man with nothing but a piece of cloth covering the dishonorable parts, sitting down under a tree with a blow pipe, a few saws and files, who works out in gold and jewels some trinket with simply miraculous skill, and in our country, with the wisdom of God, the workman with his simple hand and simple skill, and devout feeling, who honors his trade, can say even to the grandest and largest corporation—Stand Aside!

After you have wrought your ornaments, the question then is, what does

the ornament then say to the one who carries it. It is the idea that it gives to the man or to the woman to lift him or her above the mere worthfulness of every-day life, that should be borne in mind. Jewels are the language between men and women. They tell the story of love in the little circlet upon the finger of the fair girl. They announce that which she blushes to tell, but which is in her heart, and the most holy symbol of that we all love and honor, is the plain gold band that tells us of the one thing that is true and beautiful and good, and gives us comfort and joy. [Applause.]

President Dominick—Gentlemen, the next regular toast is

"The Lawyers who honestly expound and the Judges who faithfully administer the Laws which Fortify and Protect our Rights and Interests."

It is hardly necessary to introduce Judge Noah Davis.

Judge Davis responded as follows:

ADDRESS OF JUDGE NOAH DAVIS.

Mr. President and Gentlemen of the New York Jewelers' Association:

I believe, so far as this Association is concerned, I am the oldest inhabitant at this table. If I am not mistaken I have eaten at every one of your dinners, and have enjoyed them and kept my appetite for more. But if this be the fourteenth, by the blessing of God and your kindness, I hope to sit down at the thirtieth dinner.

I am very properly placed, if I am to speak of the law, with the pulpit on one side and the army on the other. Where should the law be put between them? The law supported and upheld by the pulpit, and sanctioned with its purity and power; developed and sustained by the sword, and kept in our beloved country as the defender of our rights in all respects without the necessity of resorting to the sword, but with the constant blessing of the pulpit. My toast calls upon me to talk to lawyers. I shall discharge my whole duty to my profession, I think, here to-night, by simply asserting that the lawyers of the New York Bar are not lawyers mentioned in Holy Writ, of whom high authority said: "Woe unto you, lawyers." They are quite another kind, or ought to be, and, as a general rule, I think they are. Now, with that allusion to my toast, I shall pass to my subject, not like the Rev. Dr. Hall, delivering a sermon, or making an argument under the pretext that I am not talking about the law.

I have been deeply touched here to-night by the circumstance that I have been conversing most of the evening with the gentleman who sits at my right. There has been passing through my mind portions of a great panorama in which he was such an object of admiration, of veneration and of love. He belonged for many years since the war to a trio composed of men around whom the heart of America gathered its tenderest loves and sanctities. Two of them have gone from us. Grant, the leader, going the first, as was his right, always in the lead; Grant, the great leader, facing the destroyer as calmly and as coolly as he faced the enemy on the field of battle; Grant, winning his greatest triumph on earth when he laid down his sword at the foot of the greatest conqueror of us all; and Sheridan, within the last few months—Sheridan, beloved of Grant, beloved of Sherman, honored by the whole American people, that wondrous leader for whose services Grant declared on more than one occasion that America owes a greater debt than she could ever pay. Sheridan too, within a few months has gone. But thank God, we still have Sherman with us. He is still with us, the last of the three, and may he be with us in our prayers—this will be the universal prayer of all Americans for many long and happy years to come.

Four years ago I stood before this Association in this room and I took occasion to make some remarks upon what I deemed to be the duty of every true citizen of our common country toward the government which he, in common with his fellow citizens, had chosen the ruler of. It was just after the election of Cleveland. A great change had come over the prospects and perhaps the prosperity of this great nation. We had according to the constitution selected a new president and clothed him with all the powers which that sacred instrument confers upon our national head. I said then, as I desire to say now, when another change has occurred, likely to lead to further changes in the administration of our affairs, that whatever our feelings may be we should not fail to remember that we are all American citizens, all equally interested in the proper administration of the law; all equally interested in the perpetuity of the system of the government under which we live. The blessings of good government fall like the dews of heaven alike upon the just and the unjust. You, therefore, who have sought with proper diligence to keep the present Executive and his administration in power, you—now that the voice of the majority has chosen otherwise—are bound to follow respectfully the voice of the great people

and to see, as far as you are able, that the laws are respected, the Constitution maintained, the government under which we live, preserved. This is not only our duty as citizens of our common country but it is a duty which we owe to our fathers who founded this government, to maintain it in its purity, and to hand it down as we received it from them, to our posterity. And now, gentlemen, notwithstanding any disappointment, our duty is to unite with a determined resolve that whoever represents us, whoever leads us in affairs of our government, shall have our support and maintenance, our obedience and respect, so long as the laws are administered in conformity with the Constitution of our government. Now that is the best speech which, as a lawyer, I can make upon this occasion, and I desire to add nothing to it except to enjoin upon you once more the need there is for each one of us to resolve to maintain one system for the best interests of the people.

Now gentlemen, I have been a little sorry to-night that we did not have at this table, or in this room, prepared to speak, some of that class of orators who have been exhausting themselves during the campaign; who have been called not the "highbinders" but the "spellbinders"—that is, the men who bound their audiences as under a spell, and "highbinders," I claim, is a proper name. I am sorry that some of them are not here. I am sorry that we are deprived of the presence of that leader of the "highbinders," Chauncey M. Depew. But we must forgive them for to-night.

And now gentlemen, on this fourteenth anniversary, as I have gone through this fourteenth dinner, I trust that you may all meet together, at the fifteenth and that there may be none of us missing. I only ask for myself, in tenderness to my old age, that you will not forget me hereafter, and I promise that as long as you will stand by me I will sit and eat with you. [Applause.]

Ex-President W. R. Alling at this stage opportunely proposed three cheers for President-elect Harrison. The cheers were given with a will.

Mr. Dominick then introduced Rev. E. Walpole Warren, who responded to the following toast:

"Honest Dealing Brings its own Reward, Affluence, and an honorable name."

He said:

ADDRESS OF REV. E. WALPOLE WARREN.

Mr. President and Gentlemen of the New York Jewelers' Association:

After the two sermons from the pulpit, you will, perhaps, let me direct you for a few moments without taking up the thirty minutes to which, I understand, I am entitled. I have been trying, as I sat here, to make you out to be a lot of cabbages. Once I asked my father how it was that he acquired his freedom from nervousness in addressing audiences; he said: "Don't you remember Dr. Johnson's advice—get a slight knowledge of your subject and a profound contempt for your audience and you are all right." I have been trying to get a profound contempt for you during the evening, but I have not succeeded. The first time I stood here, I heard that there were hopes of some of you entering into the bonds of matrimony; but I am sorry to say that my hopes have been grievously disappointed, for the one particular man who lives at Englewood, about whom Mr. Phelps told the story last year, still remains without a better "Haff."

There are a great many things that I would like to talk to you about, but, of course, politics are barred to an Englishman. On other occasions that I had the honor of addressing you, I have experienced the same difficulty. The last time there was trouble about contract labor. To-day I occupy the proud position of a British Minister, and under those circumstances I am very careful for fear I may get the "sack." I don't want to travel east; I should much rather stop "west." I think under the circumstances, I should say that I am a Democratic Republican; but I do want to enter my protest against the idea that England, as a nation, is a free trade nation. I believe that she dearly wants you to adopt free trade with the hope that she may get the best of the bargain. I think there will not be many years pass by before you see England throwing off the absurdity of free trade, and taking fair trade, and, if necessary, protection as a help to her industries. Now if Secretary Bayard hears this I will be off like a shot. I want you to be assured of this one fact: that I am, as an Englishman, very thankful that if there was any idea of free trade, that idea has been thoroughly buried under 10,000 votes in the State of New York.

I regret the absence of Abram S. Hewitt from the table to-night. I venture to say that the man who stood as he did, for the American flag over any other flag on top of City Hall, ought to have been supported. I am hand and heart and soul with Abram S. Hewitt, and I would have pulled

my own national flag down to stand with him. My views of the present mayor-elect may be taken for Granted. I don't like the position that Governor Hill occupies, because I am a Prohibitionist, as you have seen here during the evening. I don't think that a man ought to win who prefers the support of the saloons to the support of the churches and the Bible. I do hope when the day comes again, you will support a good man like Warner Miller. He seems to be a good man. I think, as your campaign cry goes, "he's all right." I am glad of it, and hope he will be righter still. As an Englishman I want to say a word about these tremendous parades that you have been having on Saturdays, and which it was my good fortune and ill fortune to get mixed up with. Looking at those parades, I must say that you have set us an example that we might well imitate in the old countries in Europe. Without any ill-feeling or any collision, it certainly was the grandest sight that I have ever witnessed, and I hope that I shall always witness the same spirit in you. (General Sherman here remarked, "You couldn't do that in London.") In London, no, there would be a revolution.

But my text is that honest dealing leads somewhere. I dare not say just where, because I don't know whether I am talking to Democrats or Republicans. It just depends upon whether you side with Benjamin Harrison or Grover Cleveland how you take that text. The other day my butcher's man happened to come and he spoke in a most grand and Democratic spirit. That was on Tuesday. On Thursday he told my footman that he was a Republican. Honest dealing, gentlemen? It was twenty-five dollars that did it. But now, having utterly ignored politics I want to say to you that in your general positions, in your ecclesiastical positions, in your official positions, honest dealing is, after all, between man and man, the only sure road to honor, and certainly the only road to an honorable name. If recompense does not come now, it will come later. The affluence will come later. According to the cleanness of your hands, he that never forgets you will recompense you. [Applause.]

President Dominick—Gentlemen, the next regular toast of the evening is

"Our Guests of the Evening."

I have the pleasure to introduce the Hon. Isaac H. Bailey.

Mr. Bailey spoke as follows:

ADDRESS OF MR. ISAAC H. BAILEY.

Mr. President and Gentlemen of the New York Jewelers' Association: It was quite impossible for me, of course, even if I had been in the habit, like Mr. Bartlett, of preparing a speech, to make any preparation for this one, because I did not know who your guests would be. I find they are distributed among the army, the clergy, the legal profession and the jewelers. I had an early acquaintance with the clergy; I used to go to church a good many times during the week and always on Sunday. I made up my mind during my boyhood that when I grew up I would take advantage of my liberty to keep shy of institutions with which I was perfectly familiar. My association with clergymen has for the past few years been limited. One of the clerical gentlemen who spoke to-night said that he would not preach a sermon, and furthermore proceeded to preach one. Another clerical gentleman said he would not talk about politics, and what did he talk about but politics? This is what we call clerical sincerity. I was, however, surprised to hear one of the clergymen admit his inability to discover any of the compensations in life for certain things. I wonder he didn't remember the ancient anecdote of Deacon Andrews, of Camden, Mass., which you have all heard a great many times. When the deacon's two sons were sent to State's Prison, the clergymen came over to condole with him and expressed themselves most lugubriously. "Oh, yes," said Deacon Andrews, "but there is some compensation." "What compensation, brother Andrews, do you find for this great affliction?" they asked. "Well," he said, "I know now where they be nights." This was a specimen of Christian resignation which I think you gentlemen will appreciate.

Our friend who spoke for the bar reminded me very forcibly of the fact that in course of time even our scriptural injunctions and precepts need to be differently characterized from what they were originally. For example, he quoted that passage, "Woe unto you, Lawyers." Nobody says that now. But every man who has had any experience with the law will remark with profound significance, "Woe unto you, Clients."

Mr. President, I am here to-night largely at the solicitation of a gentleman who preceded you in office, Mr. Alfred H. Smith; and the reason why Mr. Smith invited me here, I am sure, is that he feels grateful to me for having spent a considerable time during the month of October, and even in the month of September, in the endeavor to save his unimmortal soul. I will not say anything about politics on this occasion, but I will say this,

that Mr Smith seemed to me to be exhibiting about that time a decadence in virtue and patriotism which pained me, as it did his many other friends, and I appealed to Mr. Smith tenderly and often. I am not entirely certain that I did not succeed in making such an impression upon Mr. Smith as developed into a revolution on the last day, the memorable 6th of November. And I am not sure now whether Mr. Smith is suffering the pangs of remorse or whether he is reveling in the bliss of regeneration. Whichever it may be, I am bound to say that I have hope of Smith, and I have also hope of every other man who was in Smith's critical condition.

Now, gentlemen, I have had limited experience with jewelers, but much observation of them. It has been my good fortune to go up and down Broadway many times, and to gaze with admiration upon the beautiful works of art in the windows of my friend Tiffany. I have been permitted to go inside and look at many ornaments. I have priced jewelry at \$11,000. I never bought any, and to my astonishment it was never intended that I was expected to. At first I thought it was a compliment, but afterwards I thought it might be a slight hint as to the belief in my ability to pay for the goods.

I enjoy the acquaintance of a gentleman who is here to night, who keeps an establishment on the Bowery—he is located on the corner of the Bowery and Broome street. He is a man probably as well versed in the jewelry business as any man here. When I met him to-night, it seemed that he did not forget the shop even here, for the first thing he said to me was: "Well, what are you here for? What do you want?"

My Friend, Judge Davis, has suggested that he has attended fourteen anniversaries of this society. Well, gentlemen, I have had a good deal more sympathy for you than that. I have never had the hardihood to accept invitations unless I felt sure that there would be a scarcity of speakers. I felt sure that you wouldn't have Hewitt here to-night because Hewitt is suspended in the air between heaven and earth, and he feels a certain vacuum before him which leads him to dislike going to dinners. Grant, of course, is a busy man, attending to one place and preparing for another. I must confess that I didn't vote for either of these gentlemen; I voted for another man. I will not tell who. There was an embarrassment of riches in the last mayoralty campaign. In regard to the events which are before us I think you may rest perfectly content in the belief that this country is destined to a great career. There are some reasons why I have no sorrow to express to-night over the results of the election. I don't propose to live under saloon rule, but I must confess that when I see so much drinking among respectable people, it seems a little difficult to draw the line, and this idea of prohibiting some people from drinking when you are allowing other people to drink *ad lib.* is an interference with the rights of the citizen. On the whole I think we have got things arranged pretty well. I don't feel any uneasiness for the future. The only thing I have felt uneasy about to-night is the difficulty of making a speech, and that is the greater because I have had no practice for a long while. I feel very much like the member of the New York Legislature, who, when he was first elected, promised his constituents that he would give them full information regularly as to what was going on. He began his first letter in the following words: "It is pretty difficult to communicate with others about that whereof we are not the possessors of, for in so doing it is possible to fall into many errors which will be difficult to eradicate hereafter." [Applause.]

The President—Gentlemen, the regular toasts of the evening are finished, and it is suggested that we should hear from some one on the floor in response to the toast.

"Our Customers."

And I therefore call upon General George H. Ford.

ADDRESS OF GEN. GEORGE H. FORD.

Mr. President and Gentlemen of the New York Jewelers' Association:

When I received the invitation to appear at this dinner I made the cautious inquiry if it was at all probable that I would be called upon to make any remarks, as had occurred on some previous occasions, and I was assured that there was not the least prospect, as good speakers had been provided for the occasion. We have been enjoying ourselves in this corner and I personally was doing so until ten or fifteen minutes ago when I was advised that I would be called on to respond to the "Customers." I can hardly forget when you have with you the Tiffany of the world, the Black and Jaques of New York City, the Banks of Philadelphia, and the Hart of Brooklyn, that your dinners are more entertaining than your monthly statements, and after a dinner we are usually convinced that if we will only leave you we will prosper. I think we have all enjoyed this dinner very much; we have

taken a new lease of life and we are prepared to go home and dispose of your wares for another year and pray for an annual place in your Jerusalem. It seems to me that a toast should be prepared by your customers that would compliment your president and the committee who have provided this excellent dinner. I can assure you that your organization represents that which is of interest to your customers—honesty and integrity, and it is our wish that prosperity may attend your steps and abundance your individual reward. [Applause.]

The President—Gentlemen: We have among our guests who came from a long distance another one that we would like to hear from. I call upon Mr. Semken of Washington.

Mr. Semken responded.

ADDRESS OF MR. SEMKEN.

Mr. President and Gentlemen of the New York Jewelers' Association:

I do not know what motive you had in calling on a Washingtonian. We have no votes; we cannot cast our votes for president, nor even for a common councilman, so that I am entirely out of politics, at the same time every Washington citizen has his sympathies. It may be perfectly indifferent to you but my sympathies in the late contest have not been very greatly aroused because my belief has been that the country was safe in the custody of either Mr. Cleveland or Mr. Harrison. I will not speak further about politics, but I wish to say to the men who are assembled here that their fullest gratitude is due to those who have saved this country. There indeed was a trio—Grant at Appomattox, Sheridan in his ride, and the last one of the trio now living, our General who is setting there. Our country will never forget his march to the sea. Our hearts beat doubly quick when that march was going on and when peace was declared General Sherman stood there like the monument which will be erected to him after he has passed from this life. May he live long, for he deserves to see the fruits of his labor, while he is living with us. Gentlemen, I propose three cheers for General Sherman. [The cheers were given.]

General Sherman was again called on and responded happily in a few words.

Ex-President Alfred H. Smith was called on and spoke as follows:

ADDRESS OF MR. ALFRED H. SMITH.

Mr. President and Gentlemen of the New York Jewelers' Association:

I thank you exceedingly for the compliment you have paid me in calling me to my feet. I congratulate you on the large number we have present here to-night, the largest in the history of the Association. I cannot imagine why you should call on me to address you at this late hour of the evening. I felt safe particularly because of that article of our constitution which relieves an Ex-President from any responsibility in the association. I feel like a boy who is thrown overboard and told to swim ashore. I cannot imagine to what I am indebted to be called to the floor except because of the words that Bailey has said about me to-night. I am sure he knew my inability to respond to his remarks and that is why he attacked me. I do not see why he should have rung the changes on me. I wish that his name was Bell and then I would tell a story on him. I will ask that you consider his name to be Bell for a moment, and I will tell my story. On a Saturday afternoon in a country town the sexton of the village church was winding his way to the church building to put it in order for the sabbath service. When he got there, he noticed a light in the church and very quietly locked the door on the inside, and on entering the body of the building, met a man pocketing the communion service. On seeing the sexton the man ascended the steps as he supposed, to the gallery, intending to get out that way, but instead of choosing the stairs to the gallery, he unwittingly took the stairs to the belfry. The man hurried on and in a short time was where the bell hung, and he looked up at the bell and to the window forty feet from the ground. With the impulse that comes to a man at such a moment, he grasped the rope that hung to the floor, threw it out of the window and let himself to the ground. This made the bell ring, and when he got to the ground he found several anxious hands waiting to seize him. Somebody said, "now we have got you!" He replied with disgust, "Yes boys, but if it had not been for that bell, all tongue and no brains, I would have got clear." [Laughter and Applause.]

President Dominick, when Mr. Smith had finished, dismissed the company, remarking: Gentlemen, we thank you for your company and I hope that we can all meet here again a year from now.



* A Complete History of Watch and Clock Making in America.

[By CHAS. S. CROSSMAN.]

Number Twenty-eight.

Continued from page 40, November, 1888.

AURORA WATCH CO.



THE CONCEPTION of the Aurora Watch Company seems to have been with Mr. Wendell, of the firm of Chas. Wendells' Sons, doing business on State street, Chicago. The organization of the company took place in July, 1883, with a nominal capital of \$250,000, in shares of \$100 each, payable in small monthly installments. The scheme was to interest one dealer in each town or city to the extent of making him a stockholder in the company, and in turn give him the exclusive agency for the sale of the company's movements in his town or city. This appeared very plausible, for if enough dealers could be interested in the scheme the company would have a guaranteed outlet for its productions. The officers were Messrs. E. W. Trask, of Aurora, President; Albert H. Pike, of Kankakee, Vice-President; Maurice Wendell, Treasurer and Business Manager. The Directors were Messrs. M. Huffman, of Quincy, E. W. Trask, Maurice Wendell, Geo. T. Johnson and A. H. Pike. The scheme appeared auspicious, and a considerable amount of stock was subscribed for in a short time.

The city gave the company a plot of ground, located in the southern part, upon which ground was immediately broken for a factory building. The machine shop was completed and occupied in September following, when work was commenced on tools by a few men under Mr. Johnson as superintendent. The main building was commenced September 1, 1883, and finished and occupied February 1, 1884. It has three stories and basement and is well suited to the purpose for which it was built.

Mr. Geo. F. Johnson, who is a practical man and was one of the directors of the company, was appointed superintendent and commenced making parts of watches as soon as they were located in their factory. The movement is a regular 18 size, full plate, of several grades, in both gilt and nickel. They have a patented stem wind attachment made by Mr. Johnson. The first movements were put on the market in the fall of 1884, and were readily purchased by the stockholder dealers.

Mr. Wendell afterwards severed his connection with the company, and they then adopted the policy of selling their goods in open market, which plan, if we may be allowed to pass an opinion, has made the company far more of a success than it would have been under the old plan. The company has usually employed 200 operatives, turning out about 150 movements per day. The greater part of them are low and medium price grades. The officers of the company have changed somewhat, but for the most part remain the same as when first organized. They are at present as follows: M. Huffman, President; A. Somarindyck, Treasurer; E. W. Trask, Secretary; J. H. Weber, General Manager; Geo. F. Johnson, Superintendent. They are all, with the exception of Mr. Johnson (who is the mechanical man), solid business men, and all reside in Aurora except Mr. Huffman, who is a leading jeweler of Quincy, and the success of the company may be said to be an assured fact.

* Copyright by Chas. S. Crossman, 1885.

THE WILLIAMSTOWN WATCH COMPANY, OF WILLIAMSTOWN, MASS.

In considering the history of this enterprise the reader will be treated to what, for a time, might have been called a farcical tragedy. In the year 1883, Mr. R. J. Clay, of New York City, and Mr. F. P. Markham, of New Haven, Conn., appeared before the public as projectors of a watchmaking scheme, the former in the role of inventor and the latter in the character of a "shrewd" capitalist. It does not appear as yet in the line of our historical research just when these gentlemen became acquainted, but in 1883 their watch company was organized under the laws of the State of New York. The company had a large nominal but rather small actual capital. Their chief place of business was to be in New York City, and their "factory" was located in Williamstown, Mass.

Mr. Markham, after the manner common to all "shrewd" capitalists, discovered the great natural and mechanical advantages of the factory which had been secured at Williamstown. It had formerly been a twine factory, but here, no doubt, thought Mr. Markham, the watch industry would thrive wonderfully. The vacant factory had the dual advantages of water power and a steam engine, and should the steam engine be driven too fast and exhaust itself from over work, there still remained the water power to carry on this worthy enterprise until the engine could be properly stimulated to resume its functions. But the good people of Williamstown did not take kindly to the idea, and the project did not at once attract much interest.

The inventor, Mr. Clay, had constructed the model of the watch which it was proposed to manufacture. It was an 18 size movement, with an endless screw escapement, upon which Mr. Clay held the patent.

But the capital not having been subscribed, and the new enterprise not having created any sympathy among capitalists, Mr. Markham interested Mr. J. C. Wood, of Hackensack, N. J., who had a place of business in New York City. These two men interested a prominent watchmaker, Mr. Henry Oehl, also of New York City, in their scheme, and in January, 1885, he constructed a new model for them. It had a lever escapement, and was a 16 size, three-quarter plate movement. This model was accepted by them, who thereupon again tried to draw attention to their scheme. They secured the financial aid necessary by subscriptions to stock, among the subscribers being some friends of Mr. Oehl, and from this time forward it seemed more likely that the company would succeed. Organized with a capital of \$300,000, it had for its President Mr. L. H. Lawrence, an insurance man of New York. Mr. George Gretzinger, of New York was Secretary, and Mr. Keyes Danforth, of Williamstown, Treasurer. (He was the original owner of the twine factory.) Mr. Markham constituted himself the business manager, and Mr. Henry Oehl was appointed superintendent.

Alterations were made in the twine factory and it became a watch factory. It was a two story building, 40x110 feet, heated with steam and well fitted throughout. With the subscribed capital which had been paid in these alterations were made, and a number of automatic machines were purchased.

Parts of watches were commenced in the summer of 1885. About this time some dissatisfaction with Mr. Markham's "management" of the business was felt among those interested in the enterprise, and one of the stockholders who had gone in through Mr. Oehl's solicitation, and who had paid \$15,000 into the company, sued it, for the amount of his stock. He obtained a judgment, and in December, 1885, the sheriff sold out the machinery and tools under a writ of execution. They were worth about \$10,000, and were bought in the interest of the stockholders for a few hundred dollars and remained in the factory.

After this sale the affairs of the company assumed a brighter aspect. The people of Williamstown began to realize that this watch enterprise could be made a success if it were properly managed. Suits were begun against Mr. Markham, who was then living at Blackinton, a suburb of Williamstown. He was charged with mis-

management and fraud, but he then instituted counter suits, and the law's delay cooled the ardor of the willing capitalists of Williamstown, and by May, 1886, when the last legal act was consummated they had become tired of waiting, and did not care to put any more money into the enterprise.

Meanwhile the parts of twelve thousand watch movements which had been made before the legal difficulties set in, were melted up and sold for junk brass, and the Williamstown Watch Company became a thing of the past.

N. P. STRATTON

Was born at Northfield, Mass., June, 1820. At the age of sixteen he was apprenticed to Messrs. H. & J. F. Pitkin, of East Hartford, Conn., who were then manufacturing jewelers; but failing in this, the next year engaged in manufacturing watches. He was one of the four apprentices who were set to work to make the necessary tools and machinery to produce the watches, and his connection with the manufacture of watches by machinery dates from this time; consequently he may at present boast a longer connection with the industry than any other American. He remained with the Messrs. Pitkin until the expiration of his indentures, which was just prior to the removal of the business to New York City in 1841. Soon afterward the firm gave up the making of watches, and Mr. Stratton took a temporary position in the Armory at Springfield. After leaving the Armory he had a short experience in watch repairing before he went to Boston, where he engaged with Mr. A. L. Dennison. He remained here until this gentleman formed his connection with Messrs. Howard and Davis in 1850. Mr. Stratton then took another position until the spring of 1852, when he became assistant superintendent with Dennison, Howard & Davis, at Roxbury. He had at this time much to do with the modeling of the 18 size movement, which was the only watch made for a number of years. In the July following Mr. Stratton was sent to England to learn the process of electro-gilding, then just coming into general use among the English manufacturers, but more particularly to get a knowledge of how the beautiful frosted appearance was produced on a gilded movement. Although the process was at the time quite a trade secret, he had little difficulty in getting the desired information in Coventry, Mr. Dennison having paved the way to success on a previous visit. On his return the following November he gilded the first watch made by the electro process at Roxbury. He remained with the firm and their successors at Waltham in the capacity of assistant superintendent until the formation of the Nashua Watch Company in 1859. In the organization of that company Mr. Stratton took the position of superintendent, strongly impressed with the importance of producing a finer watch than had previously been made by any company in America. The history of the Nashua Company and Mr. Stratton's connection with it has already been given, and our readers are familiar with it. While at Nashua he invented his patent winding barrel which was adopted by the company, and afterwards continued by the American Watch Company for a number of years. After the sale of the plant at Nashua Mr. Stratton returned to Waltham, and remained there until the autumn of 1863, when he went to England as the purchasing agent of the American Watch Company, remaining there until 1880, when he returned to Waltham to reside, being obliged by ill-health to give up all business.

JOHN C. ADAMS

Was born in Prebel, Onandaga Co., N. Y., in 1834. His parents moved to Syracuse soon afterward, and in 1841, following the wave of western emigration, settled near Elgin, Ills. Mr. Adams served three years' apprenticeship in Elgin, from 1848 to 1851, with Mr. J. H. Atkins, a former watch manufacturer of Liverpool, Eng. After this the young man worked as journeyman for two years in Janes

ville, Wis., when he returned to Elgin and engaged in business with Mr. G. B. Adams of that town. He remained in Elgin until 1857, when he went to Chicago and took charge of the watch repair department of Hoard & Hoes. After being there two years he took a similar position with W. H. C. Miller & Co., with whom he remained until he began the agitation which resulted in the formation of the Elgin Watch Company. Since that time it has fallen to the lot of Mr. Adams to organize several American watch companies—the Cornell, Springfield, Ills., and Lancaster being among his efforts in that direction; he has become known in trade circles as "The Great American Starter." Mr. Adams has certainly been an important factor in promoting the interests of the horological industry in this country. Through his efforts, more or less direct, something like 5,000 persons have found employment in this line of manufacture since Mr. Adams first entered the arena. We will not go into a longer biographical sketch just here, as we have spoken of Mr. Adams in connection with the formation and early history of several of the most prosperous existing companies. His important connection with some of them is in danger at the present time of being ignored, but it is a fact that their organization is due to his persistent efforts. His residence has been in Chicago for a number of years.

J. H. ALLISON

Made his first watch at Detroit, Mich., in 1853. It had a chronometer escapement, and was in general appearance like the full plate English chronometer, with a fusee and chain. The balance had time screws and sliding weights for adjusting. Mr. Allison made most of the parts himself to show what he could do in that line. He exhibited it at the State fair and was awarded a silver medal. In 1864 he made another chronometer, this time a $\frac{3}{4}$ plate with gold wheels. He also made a nickel movement, upon which he tried his maiden effort at damaskeening with a tool of his own construction.

In the year following he made a number of chronometers, some twenty in all. At this time he removed to Chicago and took charge of the watch repair department of N. Matson & Co. He subsequently severed his connection with this house, and made a few stem wind chronometers and altered some key wind chronometers to stem wind, which he had made in Detroit, they being all key wind. In 1883 he made three full plate movements with a stem wind arrangement after his own design. He never served an apprenticeship. He is at present in the retail jewelry business in Indiana.

HIRAM SMITH, OF BOSTON.

His early life was passed in New Hampshire, where he served his apprenticeship, coming to Boston in 1841 at the age of twenty-one years. He worked as journeyman until 1845, when he went to Fitchburg, but returned to the Hub in 1852, at which time he engaged in the watch and material business at No. 32 Washington street. In 1857 he moved to No. 59 of the same street, and in 1859 he commenced the making of watches, which he continued until 1863. The best movements he made were of the Swiss bridge style. He also made a few fine three-quarter plate movements, the first he turned out being of this style. He then made a number of lower grade full plate movements. The bridge movements were similar in appearance and size to the old Jurgensen, after which they were largely patterned, the trains being of red gold. The especial feature of these movements, however, was that the parts were all interchangeable, being constructed with especial reference to gaining this end. He made a few jewels and balances, but bought the greater part of them. Mr. Smith, like many others who have attempted to make watches on a small scale, found that he could not compete with the American companies and so gave up the struggle, and has since confined himself to the selling and repairing of watches, together with his material business. His total production was about one hundred.



[FROM OUR SPECIAL CORRESPONDENT.]

LONDON, NOV. 20, 1888.

Manufacturers and factors have alike good reason to be satisfied with the present position and prospects of the several branches of our trades. There is not that rush of orders that we remember at this season fourteen and fifteen years ago, but compared with the extent and description of the trade during the past few years, these are good times. There is activity in nearly all departments, while the business done is of a far less speculative, and consequently of a much more satisfactory character than we have had lately. Englishmen are proverbially fond of statistics, and although it is known that figures can be made to mean almost anything, they still found all sorts of theories on the official returns of our Board of Trade. However, without any manipulation, these returns for October are of a satisfactory character, and have inspired increased confidence that the improvement of the past months will be continued.

The best sign, as far as the jewelry trade is concerned, is that there is an increased demand for decorative articles. Of course, such goods are always in greater demand towards Christmas, and manufacturers expect such demand for luxuries from their retail customers who, to a great extent, have to risk the chance of selling them. But we are informed that already this year there is an increased demand by consumers. There is every probability, therefore, that instead of having heavy stocks remaining, shopkeepers may have to replenish by fresh orders to the manufacturers. If there is one of our industries that would permanently benefit by a good brisk Christmas trade it is that of the manufacturing jeweler.

I do not think that travelers will have quite so many novelties for their customers as the latter would like. (There is always an outcry for "something new for Christmas.") But they have at least an increased variety of familiar articles, and there are some very opportune revivals. For instance, lockets are come to the front again. For a long time these neat appendages have not been "fashionable," but they are coming back. At present the demand is only for the smaller kind—gentlemen's lockets, in fact—but there are indications that ladies will revert to their former favorite. The locket manufacturers are wisely doing all they can to encourage this taste. The style of necklet and locket will, however, require considerable modification, as those formerly worn would be quite out of keeping with modern ideas.

This is an opportunity for makers that should be most carefully made use of. If comparatively small and very neat articles are produced they will create a demand for new goods. Whereas if manufacturers follow their former patterns and ideas only, either the wearing of lockets will not become general, or, if it does, the old ones will be brought into requisition and will curtail the sale of the new.

There is a brisk demand for rings at present—all kinds are wanted—but the hoop and Marquise patterns are given the preference. Manufacturers of gem rings are busy, some of them not being able to find workmen enough for present work. There is a continued run on the various imitations of gold—especially in chains. Those who were so severely opposed to this trade some time since must be astounded at the proportions of it now. I am, however, still of opinion that with an improvement all round in the trade of the country, the cheap imitations will be superseded by the real article. Can it be an advance—the first step maybe—in this direction which is causing the extra demand for 9 karat Hall-marked gold work? Brooches, chain and ear rings of this make are going well now.

As the present year will have closed before your subscribers read anything further from me, permit me to wish them and yourselves a happy Christmas and very prosperous New Year.

I congratulate the jewelry trades of the United States in their possession of one of the most ably edited, best printed, and certainly the most artistically illustrated trade journals I have ever seen. I wish the editors and publishers of THE JEWELERS' CIRCULAR AND HOROLOGICAL REVIEW all the success they deserve. I could not wish them anything better.

VIGILANT.

Birmingham Letter.

[FROM OUR SPECIAL CORRESPONDENT.]

BIRMINGHAM, NOV. 8, 1888.

THE HOLIDAY BOOM EVAPORATES.—AMERICAN POLITICS.—WHAT THE ENGLISH JEWELERS HAVE TO OFFER.

As I wrote you, most manufacturers expected a very large Christmas trade, but unfortunately their expectations have not been realized. From some unexplained reason trade all over the country has received a check, whereas early in October we expected to be busy right up to Christmas. With many manufacturers orders are falling short already, with every prospect of still further decline. This is, of course, not universal, as some of the larger establishments are still very busy, but by far the larger number complain of the shortness of orders.

We received the intelligence of the result of your presidential election here yesterday morning. Commercial people here do not take much heed of it, especially in the jewelry trade, as if the tariff remain or is increased whilst it prevents our sending goods into the States, it also makes it easier again for us to compete with you in foreign markets, so that one fairly balances the other.

As you may know, we have had the Right Hon. W. E. Gladstone in this town all the week on a political errand, which has caused a run on medals with Mr. Gladstone's head on, also of cheap brooches containing, in some cases, the head stamped up in relief, and in other cases a photo printed on silver and tinted.

I saw a few days since some very handsome silver scent bottles, spun or stamped in all silver, some being quite plain, finished bright, others richly chased or bearing a handsome saw-pierced raised monogram.

The fashion in silver brooches during the past year or so has undergone a complete revolution here. Formerly these were almost invariably copies of best wrought colored gold work, but instead of being hand made they were stamped in dies. We now have them principally elliptical in shape, a flat disc of dead frosted silver with a fancy border of raised gold or silver, usually partaking of the shape of a scallop, soldered on, the center being ornamented in a similar way with some floral design. These raised parts are very thin, indeed, but as they are raised they can be lapped bright, whilst the veins of the leaves and divisions of the flowers being cut up with the graver are, together with the background, left a dead ivory white.

Chatelaines are very fashionable at the present time, but unfortunately this fact is of very little use to jewelers, as an enterprising maker has flooded the market with them in cheap metal, and ladies will not buy them in gold or silver. Their usual form is a circular or oval classical ornament at top, with a hook at back to go through the belt, and from this ornament three chains hanging with scissors thimble case, etc. For elderly ladies a spectacle case is attached.

It is astonishing how soon a large number of makers commence to turn out any article there is a sudden demand for. Only 12 months since compass charms for gents' and ladies' chains were very slow sale. Since then they have become very fashionable, and the result is that they can now be bought at all prices, from the cheap and useless threepenny metal article up to the best 18 karat gold ones. As a consequence, prices are becoming so low that soon they will not be worth making.

SOLITAIRE.

Free Hand and Mechanical Drawing.

BY EXPERT.



THE MOST difficult feature attendant on writing up the subject of painting in oil colors, is to obtain the proper pictorial illustrations of technical details. With simple black and white, as we have in wood cuts and similar engravings, it is utterly impossible to convey the faintest idea of the technical methods of oil color painting. Even such efforts as have been made in colors printed from lithograph stones and wood or kindred blocks, are quite as liable to mislead as to instruct the art student. It seems about the best course to pursue in self-culture in this matter to get as good an idea of the methods in use from careful reading, and then when opportunity is afforded, to examine meritorious specimens of painting, I do not mean by this to

stand off at the proper distance to get the pictorial effect, but get your eye close to the canvas and study the methods the artist used to produce his effects. Analyze the technical details; see about how he handled his brush; the consistence of the color; take note, in fact, of everything that careful scrutiny will give you of the artist's mode of working. These points are of vital importance, and they are just the parts of the technical details all attempts at showing by printed illustrations in colors entirely fail to show. Within a few years colored paints have been subjected to a sort of embossing process intended to imitate brush marks and places where the artist loaded his canvas with a great deal of color. Such attempts satisfy only superficial observers, but they will deceive and mislead the art student if he attempts to profit by them. In carrying out the suggestions of scrutinizing good art specimens, the student will soon detect the fact that almost every artist has his own peculiar methods, but accomplishing very nearly the same results; and it is only by careful study of these several methods the student is able to best judge of these results. My reader may think I am wandering from the subject I have in hand, *i. e.*, sketching in oil colors. Not at all; we must commence correctly if we hope for good results. Few persons who have a liking for art, but often compose mental pictures, and think to themselves, "Now, if I only could paint just as I see it in my mind's eye, I could surpass any effort the world has produced." It is only by mastering the technical details we can hope to realize such ideal conception, or even place on canvas a fair representation of what we actually see in nature. Painting in oil colors has great resources to offer the artist, both in a vague uncertainty of contour and in strength and vigor of strong definition and contrast. This is well illustrated in sketching; we find it almost impossible to define the limbs of a tree in the first painting without their assuming undue prominence. In all such matters of detail in the first painting only give, as we might say, a suggestion, leaving the proper definition for the second painting after the transparent tissue paper has been spread over the first broad effects of the sketch. I used the term definition above, and think I cannot do the reader (if he is reading this article with a desire to acquire a knowledge of art) a greater kindness than to consider what is implied by the word as used. Young artists learning to draw are taught to surround the object they are depicting with a strong vigorous outline. This part of the art of drawing is perfectly illustrated in the *silhouette* portraits cut in profile with scissors from paper. This sort of training leads to a hard, crude style, perfectly exemplified in the early history of art. The term definition in painting can be explained by saying that the effort should show the location, character and importance of the object. One of the

greatest mistakes of early art was a microscopic exactness of detail. The true idea is to express any important object with sufficient distinctness to be readily recognized, but at the same time avoid undue importance which always follows efforts at too careful drawing. In the first painting of a sketch give the broad full effects with precision letting each object occupy the proper amount of space, preserving the general contour, but attempt no details like showing leaves or grasses. In tree trunks show the shadowed side of the tree, and if any accidental flecks of sunshine fall through the foliage, locate the spot with a full pat color at the right spot. In working up the first painting keep the pencil full of color, making the surface of the sketch as smooth as can be conveniently done with bristle pencils, leaving any attempt toward loading the canvas (or panel) with a thick color for subsequent paintings. I wish to impress on the student the importance of understanding when to let one's color blend and soften into those which surround it, and when to avail himself of the power to bring the strongest, sharpest contrasts, both of color and light and shade juxtaposition. I remember a painting of a tiger crouched in a jungle of yellow reeds and grasses. The hinder parts of the animal was lost in complete obscurity among the reeds, which although conveying no sense of a lack of light, because if the artist had wished to he could have rendered the form of the tiger's body and limbs perfectly distinct in half tone; but his idea was to concentrate the gaze of the spectator on the glittering eyes and gleaming teeth of the ferocious brute. The painting of the head was careful to every detail, even to the glisten of the saliva on the lips and the sharply contrasted bars of black and tawny skin. In this picture was a perfect illustration of strong definition and soft melting and blending of colors. In sketching it is well to let the shadows extend a little more than would seem proper when painting foliage. As, for instance, we are making a sketch in which we have a tree with overhanging branches, we paint in the lighter masses of foliage but do not attempt to express the higher lights. The top of one tree when it meets the sky is blended in with the blue or grey in a sort of indefinite indistinctness, like as if seen through a fog, but not paling as in a fog. A better explanation is in the words of Mairima: "Learn to look at nature with winking eyes;" that is, with eyes so near closed that all minor details are lost, and you see only masses of color modified by masses of shade. When you have your sketch in this condition, either let it dry or spread the varnished tissue paper over it and then work up the details. As, for instance, in your trees, with a pencil filled with lighter green, produce the effect of leaves extending over the sky. Make out the form of the branches in the top of the tree, working the effect of the foliage over the limbs and give the effect of shadowed leaves extending outward, studying to express yourself as you see nature.

Magnetism in Watches.

As so much has been said regarding magnetism and the ruinous effects of same in watches, and the prevention by non-magnetic balances, hair springs, escapements and various appliances, we deem it proper at this time to express our opinion regarding the dangers and relative values of the devices now in use. The danger of watches becoming magnetized, comparatively speaking, is not one to ten thousand. A watch can only become magnetized when in *very* close proximity to great magnetic forces such as dynamos, or direct connection with a horseshoe magnet. The electric influences of the air or such as are created by friction in the various ordinary pursuits of life, railroading included, are *not* of sufficient force to magnetize a watch or even change to any extent the rate of a well made and adjusted timepiece. While the dangers of magnetism are almost invisible, accurate time is indispensable. The thousands of our watches in use on railroads and elsewhere, have satisfactorily dem-

onstrated to us that our labors to make a perfect timepiece have been successful.

It must be acknowledged that the results of close rates over a long period of time as obtained, are due to the delicate adjustments of balance and hair spring. After many tests of non-magnetic watches and experiments with metals of a non-magnetic nature, we fail to find any worthy of adoption and we are fully convinced that the close and delicate adjustment and lasting rate which we demand cannot thereby be obtained. We assure the trade that it is our intention and purpose to put upon the market only perfect timepieces. But to persons whose vocations are such as to constantly subject their watches to magnetic influences, or others who have fear of such influences upon their watches, we would recommend the Giles Anti-Magnetic Shield, as it protects *all* parts of the watch without detracting from its good qualities or the introduction of any experimental metals which may appear to give fair or even good results, but which have not stood the test of years. Our opinion is if protection from magnetism is needed the shield is better than a change from material that we know is good, to what we fear may turn out to be a failure in course of time. It must, however, be borne in mind that watches are not made to be placed upon dynamos or horseshoe magnets, but to be carried in the pocket for timekeeping.

THE COLUMBUS WATCH CO.—*Adv.*



[THE CIRCULAR is not responsible for the opinions or statements of contributors, but is willing to accord space to all who desire to write on subjects of interest to the jewelry trade. All communications must be accompanied by a responsible name as a guarantee of good faith. No attention will be paid to anonymous letters. Correspondence solicited.]

A COPY OF EXCELSIOR FOR SALE.

To the Editor of the Jewelers' Circular:

I have Excelsior's Treatise on the Balance Spring, in good condition, hardly soiled any. Will sell for \$3.00.

WILL WORSTELL.

West Liberty, Ia., Nov. 7, 1888.

Mr. Charles F. Trube, Galveston, Texas, writes that he has a new copy of Excelsior's Treatise, which he is willing to sell.

WATCH AND WATCH CASE MAKERS IN 1860.

To the Editor of the Jewelers' Circular:

Will you please inform me the number of watch movement factories also case factories in the United States in 1860. Also the number of case and movement factories now in existence in the United States. By a prompt answer you will confer a great favor. If you cannot conveniently tell the exact number, you can give me as near as you can ascertain, and oblige yours, respectfully,

E. K. BROWN.

Rising Sun, Md., Oct. 26, 1888.

[To find the number of watch and watch case makers in existence in 1860, it was necessary to first get their names, and as the names may be of some interest we print them herewith. Mr. Charles S. Crossman is our authority for saying that there were but two watch factories in existence in 1860, viz: the American Waltham Watch factory, and the E. Howard & Company's factory. At that time watch case makers were plentiful in New York City, as appears by the following list which we have obtained with the aid of some of the oldest men in that business: Aug. Guinaud, Humbert, Dibbs & Co.,

Laurent, John P. Comins, who made cases for the American Watch Co., Joseph Fahys, Cronin, John H. Giffin, Salvator J. Voisard, L. & A. Mathey, Henry Droz, Auguste Lachat, W. B. Lawten, Nichols & Goodwin, Messmer & Courvoisier, Ducommun, Victor Marchand, Piquet Bros., Francis Dubois, S. H. H. Penton, Theo. J. Merceier, Andrews & Co., Thomas Bond, John H. Hicks, Auguste Barbier, William Gibbens, Louis E. Glatz, Jesse Watson, Chas. Cuendet, J. Fortenbach & Co., Benj. F. Gott, Henry Harrison, Victor Herb, Edward Matile, Ferdinand Nicod, Hiram Tarbox. The majority of these men employed but a small force. The following named were also in business at that day: Durand, of Newark; Baldwin, of Newark; P. A. Giannini, of San Francisco; and E. Tracey & Co., Jacot & Bro., C. & C. P. Warner, Pequignot, Boss & Peters, all of Philadelphia. The number of watch companies now in existence is eighteen; the number of watch case factories is about thirty. This latter figure includes only the factories of importance.—Ed.]

TESTIMONIALS.

To the Editor of the Jewelers' Circular.

Dr. Holmes has written me a letter which I mislaid, in which he refers to THE CIRCULAR as a superb book, and speaks very highly of the excellent manner in which you have reproduced his article. Candidly it was better printed than in the Geological Survey report.

Very respectfully yours,

GEORGE F. KUNZ.

To the Editor of The Jewelers' Circular:

Please find enclosed draft for \$2.00, for JEWELERS' CIRCULAR. I received your notice some time ago, but owing to the campaign excitement did not respond at once. I think the monogram plates given in THE CIRCULAR are the best I ever saw in any book gotten up monthly.

E. A. THARNISH.

Atlantic, Iowa, Nov. 5, 1888.

SCHOOLS FOR WATCHMAKERS.

To the Editor of the Jewelers' Circular:

Please inform me if there is any watchmakers' school in the New England States, or in New York state. If so, how many, and where?

A. E. GARNSEY.

Sanford, Me., Nov. 12, 1888.

[There are no schools for watchmakers in any of the states mentioned. Chicago, Ills., has a Horological Institute; La Porte, Ind., a School for Watchmakers; and Mr. W. F. A. Woodcock, Winona, Minn., receives pupils for thorough instruction in watchmaking. A school was to have been opened in New York city, on Oct. 2d, but it has not yet been opened.—Ed.]

BLIGHT OF THE REAL ESTATE BOOM.

Los Angeles, Cal., Nov. 6th, 1888.

To the Editor of the Jewelers' Circular:

DEAR SIR—Owing to the failing health of my wife, I was compelled to take her to a climate less subject to such radical changes as we have in Pennsylvania, and having heard of that perfect and health-giving climate where there is no winter's desolation, nor summer's oppressive heat, that land of oranges and big pumpkins, Southern California, we started thither to investigate how much of it was poetry and how much reality. To an eastern man this country lacks the wood-covered mountains, hills and streams, for their rivers seem to run with their bottom sides up, the sand on top and the water underneath, and the dust of autumn is truly annoying. On the other hand the orange trees with their dark green leaves and fruit, the many tropical and semi-tropical plants; the vast vineyards, with their vines loaded down with large, luscious, purple and white grapes; the vast plains; the low lying foot hills, backed by these grand old mountains lifting their heads to the glorious sunshine; the welcome sea breeze that tempers the atmosphere, and the delightful

nights, ever made light by this beautiful starlit sky—all make a beautiful picture which is by no means forgotten. I started out to write about the state of the jewelry trade as seen by me, however, and not a eulogy upon Southern California climate, at a thousand dollars an acre. As I have been compelled to remain here for a few weeks I have wandered about among the jewelry stores in a kind of a non-descript manner and have formed my idea as to the state of trade mostly from an outside point of view. The jewelry trade seems to be very well represented as I counted about twenty-four-or-five stores within the city limits and do not suppose I saw them all.

Los Angeles has been a city of marvelous growth, and for push, vim, and "get-up-and-git," it is hard to beat. The sale of property has been a rare morsel for the real estate dealer, whose name is legion, and many a poor lamb he has shorn. Virtually it has been boomed to death, and it reminds me of an inflated balloon in which a hole has been punched and the whole thing flattened out, not that the city is dead, but prices on real estate have been in such an abnormal height that a reaction is bound to take place. There are no manufacturing interests to keep the place up, and while a good climate is very nice it will not fill hungry mouths. Rents are exorbitant. As an illustration I noticed a neatly fitted up little jewelry store situated centrally, upon a corner, which is, perhaps, 15x40 feet, that rents for \$5,400 per year. Now it seems to me that this is pretty good rent for a room of this size in a city of fifty or sixty thousand inhabitants. To my surprise I found the retail prices for goods was fully as low as in any of our eastern towns, although they get a great deal better price for repairing, and I was informed that competition is very sharp. The stock carried by some of the largest establishments is, perhaps, larger than the average carried by dealers in eastern cities of the same size. Last year when the boom was on they said that business was first-class and prices fair, but business so far this year has been very dull, although the outlook for the winter is better, as they are expecting a larger influx of people to winter here on account of the yellow jack in Florida. The principal establishments in the jewelry line that I noticed are: Mr. Busch, on Main street, who carries a very nice line of goods, and has been exhibiting a fine line of emblems in his window; the Opera House jewelry store; Hollingsworth, on Spring st.; and Montgomery Bros., on Spring st., who appear to be doing more than their share, and whose room has recently been elegantly fitted up by B. & W. B. Smith, of your city.

Los Angeles has put up a great many fine buildings in the last year and there are a great many under construction. The amount of building done here last year amounts to over eight millions of dollars and while it has been overdone it is a city that has come to stay and as the metropolis of Southern California will always be a city of commercial value.

C. M. H.

TO EXHIBITORS AT THE PARIS EXPOSITION OF 1889.

Department of State, United States Commission to the Paris Exposition of 1889, New York Office, 1 Broadway.

It may be well to call the attention of manufacturers and others who wish to make exhibits at the Universal Exposition at Paris, next year, to the limited time for preparation. The allotment of space takes place on November 15, and shipments by steamer begin in January. The amount of space allotted to the United States is being filled up by applicants from all parts of the country. The Commissioners are progressing with their work on a basis of absolute impartiality. It is simply a case of first come first served. From present indications, it is not unlikely that many manufacturers who are now hesitating will find themselves in the position of the foolish virgins, unless they make application for space without further delay. According to the provisions of the French Government, there is to be no charge for space occupied by exhibitors. Moreover, as it is the intention of the United States Government in participating in

this Exposition to demonstrate the merit and comparative excellence of our products and manufactures, the Commissioners will forward, free of freight between New York and the Exposition, going and returning, all articles received for exhibit.

The exhibition is to be divided into nine groups, viz: I.—Works of art; II.—Education, and processes used therein; III.—Plain and decorative house furniture; IV.—Textile fabrics; V.—The raw and manufactured products of mining, forestry, chemistry, etc.; VI.—Apparatus and methods of mechanical industries; VII.—Food products; VIII.—Agriculture, vine culture and fish culture; IX.—Horticulture.

In submitting the report from the Committee on Foreign Affairs, Hon. Perry Belmont, in advocating an appropriation, stated that "in nearly all of these branches of industry, it is believed that the United States has made great progress since its participation in the World's Exposition held in Paris in 1878. If no other considerations presented themselves, it would, therefore, be desirable for the advancement of the commercial interests of the United States that the invitation thus extended by the French Republic should be accepted. But there are other reasons which can properly be regarded by the Congress of the United States. This nation cannot forget its obligations to France for the assistance rendered in its early struggles for freedom. On many occasions since, notably in the presentation by the French people of the Statue of Liberty which now adorns New York Harbor, the sympathy and good will of the French nation towards the United States and its government have been manifested. The year 1889 will be the centennial of events in France which gave impetus to the establishment of republican institutions throughout the world. It is clearly the duty of the Congress of the United States to promptly take action upon the invitation extended, and thus to proclaim, in the most emphatic manner, its approval of this important project." It will be remembered that in consequence of this report the sum of \$250,000 was appropriated to be used under the direction of the Secretary of State to defray all expenses. All communications must be addressed to the Commissioner General, William B. Franklin, or the Assistant Commissioner General, Somerville P. Tuck, whose offices are in the Washington Building, No. 1 Broadway, New York. The French Commission will not correspond with foreign exhibitors.

To the Editor of the Jewelers' Circular:

Enclosed find \$2, for which send me THE CIRCULAR for one year. I have received two sample copies and have read them with much interest.

R. FRANK BARR.

Martinsburg, W. Va.

To the Editor of the Jewelers' Circular:

I see that there is a new edition of Saunier's book out in the November CIRCULAR. Will you trade the one I bought of you for one of these?

Who is there in the city who can do a fine and difficult job of watch repairing and do it on his honor? I have been humbugged until I am discouraged. I have now several odd jobs on hand; it will not pay me to buy the additional tools to do the work, and I can't find any one I can trust to do it for me. Is there any one in Boston or near my place who has a good reputation which he thinks as much of as the few dollars he will get for the job? If you know of any such in this country or Europe I will be greatly obliged to hear of them.

Very truly,

W. S. MILLS.

Warren, R. I., Lock Box, 12.

[We cannot exchange the old edition of Saunier for the new. We fear Mr. Mills has been unfortunate in the choice of watchmakers when he asks whether there are any he can trust with fine work. Reliable and capable watchmakers are to be found not only in Boston, but in all the cities and larger towns of the United States.—ED.]



[FROM OUR SPECIAL CORRESPONDENT.]

KANSAS CITY.

KANSAS CITY'S MODEL JEWELRY STORE.

Kansas City, among western cities, is fast coming to the front. Its many magnificent buildings, all erected within the past ten years, and representing all the latest styles of architecture; its great number of cable street cars, so much more convenient than horse cars, and the activity of the people, convince one immediately that he is in one of the most wonderful of the rapid growing cities of this young country. Kansas City has suffered much in the past for the want of a good hotel, but that want now is fully satisfied, as there are several very good ones, the best undoubtedly being the new Midland recently opened, with dining room and kitchen on the sixth and seventh floors. This hotel stands on very high ground, and from the dining room you have one of the grandest views of the Missouri valley and the surrounding country that can be obtained.

This city claims a large share of the wholesale business of the Southwest, and this business is increasing rapidly every year, for, being a great railroad center, it is a natural distributing point for the Southwest and West.

As regards the retail trade, all lines are fully represented by large and handsome stores, conspicuous among which are the retail jewelry houses. The handsomest at the present time is the new store recently opened here under the name of the Jaccard Watch and Jewelry Co., located at No. 815 Main street, Eugene G. E. Jaccard, President and Manager, G. O. Jaccard, Treasurer, and R. J. Gilbert, Secretary and Assistant Manager. The main store is 25 feet front by 80 deep, and is finished in antique oak and French plate glass, with circular center case and marble and tile floor.

The decorations are perfect, being delicate light shades blending so well as not to detract in the least from the handsome side cases. The glass chandeliers are lighted by electricity. The center or jewelry cases, which are of mahogany and French plate glass, stand on oak counters, making a very handsome contrast. There is one feature in these circular cases which adds greatly to their perfection, and that is the sliding glass doors at the rear instead of mirrors. The doors are simply a plate of glass (no frame) sliding one by the other, and provided with small brass knobs in lieu of handles. The great convenience of these glass doors is, that the light from the rear of the cases on the goods displayed is as strong as that from the top or front, and there are no dark corners in these cases. They are a great improvement over the old style of mirror doors which interfere greatly with the light on the goods. Every little detail about the fixtures of this store has been looked into carefully, and the result is a handsome store well calculated to display a stock in the most attractive manner. At the rear of the store and connected by a handsome staircase is one of the handsomest art rooms in the West. In size it is about 25 by 40 feet, with a height of ceiling of about 35 feet, and is beautifully lighted by an immense skylight and by electricity.

This room is devoted to the display of paintings, statuary, pottery of all the finest makes, cut glass, bric-à-brac and all the latest novelties in Mexican onyx, clocks and tables, and a variety of brass goods. In the main store the wall cases are devoted to silver and plated ware, and the center cases to diamonds, watches and jewelry. They have an optical and umbrella department also, and, in fact, keep well selected stocks in the many departments that any first-class jewelry house would keep.

This house was established September 10, 1888, and has no connection with the St. Louis house of similar name. They report a very satisfactory business so far, and everybody who has any acquaintance with the young men in charge predicts a great success for them. Mr. Jaccard's and Mr. Gilbert's schooling in the business was with the old and long established house of Mermod, Jaccard & Co., St. Louis, and nothing farther can be said in their praise if they continue to carry out those same principles which have given the St. Louis house its high position in the mercantile world.

The oldest established jewelry house in Kansas City is that of M. B. Wright & Co., established in 1865, and composed of Messrs. M. B. Wright and J. R. Gleason. They are located at 600 Main street, in a store about 25 by 100 feet, finished in black walnut. They keep a general line of goods and have an old established trade.

Cady & Olmstead, another old established jewelry house, began business here in 1875, keeping a general line of watches, diamonds, jewelry and silver and plated ware. L. S. Cady, Geo. P. Olmsted and E. A. Hosier are the main members of the firm. Their store has a frontage of about 25 feet on Main street, and extends back to the next street in the rear (Delaware street). This store is now being remodeled, and will, when it is completed, be another handsome jewelry house, with side and counter cases of mahogany and French plate glass. The rear, or Delaware street, end of the store is to be furnished and used as an art room.

Mr. J. N. Smith has a small but handsome store situated at the corner of Main and 7th streets, and carries a well selected stock, looking especially for the trade in diamonds and watches. He began business here in 1870 and has an established trade. J. R. Mersey, his head man, has had long experience in the business and is an able salesman.

HARD SOLDER.



[FROM OUR SPECIAL CORRESPONDENT.]

CINCINNATI, Nov. 19, 1888.

For a week after the final closing of the Centennial there was a decided lull in the jewelry trade in Cincinnati, but the reaction has already set in. The influence of the approaching holidays is beginning now to be felt in the retail as it was a month ago in the wholesale trade. The jewelers of Cincinnati are also banking somewhat on the fact that business after a presidential election is going to be active in proportion as it was dull during the exciting campaign just closed.

Mr. R. H. Galbraith, head of the house of Duhme & Co., is in New York.

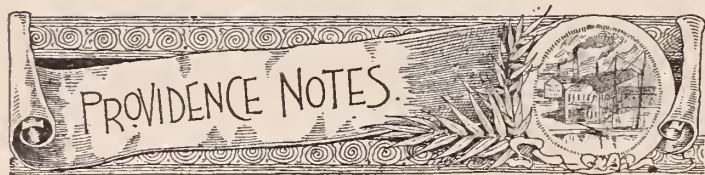
Mr. Louis Hummel, one of the organizers of the new local Purchasing Association, the outgrowth of the recent convention of the Ohio retailers in this city, reports that just now no active steps are being taken towards increasing the membership, as all local jewelers are too busy getting ready for the holiday trade. After January 1 he hopes to see the association include every retail dealer in the city.

It is probable that there are now enough of the original "crown jewels" in this country to fill a bushel measure to overflowing. Something less than a pint of them was exhibited at the recent Cincinnati Centennial. Unfortunately too many of these genuine stones have a color suggestive of what greets the eye when one surveys a field of ripe grain. Some are almost as deep in color as a ripe pumpkin. A Cincinnati gentleman, in discussing this fact with your

correspondent to-day, said: "These men who claim to have the original 'crown jewels' and whose collection is almost uniformly yellow, forget that the old Bourbon heads were not ornamented with gems that were not perfect in color; that the African diamond fields, the home of the straw-colored jewel, were not discovered until all the Louises were laid away in the tomb."

A New York paper recently printed a paragraph to the effect that jewelers of that city lost on an average of \$10,000 a year from ring thieves, and describes them as "uniformly well-dressed and respectable in appearance." They secure their booty by asking to look at several trays of rings, and while talking in an entertaining way to the clerk who waits upon them manage to slip one or two up the sleeve or into the pocket. This is an old trick which the ring thief is now prevented from practicing in most of the Cincinnati jewelry stores, by the general use of steel rods which pass through each row of rings in the tray, and are fastened into an iron frame with a hinge at one corner and a lock at the other. After a thief, more bold than the average, ran out of one of the jewelry stores of the city several years ago with a tray, steel rods and all, and made his escape, the jewelers adopted the plan of having each tray anchored to the counter by means of a substantial chain. The jewelry stores of this city, in the daytime, come very near being thief proof.

One of the most extensive importers of diamonds in the West said to your correspondent to-day: "There is virtually little demand out here for any of the precious stones save diamonds. The people are not educated up to the value of genuine rubies and emeralds. I've had customers come into my place of business, and after carefully turning over and examining, under a glass, a ruby which actually cost me \$2,500, offer me \$100 for it. They forget that we do not sell those colored jewels by the avoirdupois weight or peck measure."



[FROM OUR SPECIAL CORRESPONDENT.]

PROVIDENCE, NOV. 15, 1888.

Since my last writing the business of the manufacturing jewelers has improved little, if any, and stagnation is marked in almost all lines, with little prospect of improvement before the opening of the new year. More time has been devoted to campaign affairs during the past month than to business interests, and the jewelry branch has been no exception to the rule, but has suffered in proportion to the other lines throughout the country. Failures amongst the jobbers have been few, only one or two having occurred of any consequence. Collections have been fair only through the trade, and the appearance of trade paper is again noted by some of the manufacturers, but not to any alarming extent.

The gold and silver refinery of Horace Remington & Son, No. 37 Potter street, was visited by fire on Tuesday. The flames originated in an evaporating box. The damage was small, not amounting to over \$300, thanks to timely discovery.

Mr. J. D. Fowler, of Fowler Brothers, has been confined by sickness at his home on Comstock avenue for some days, but expects to be around soon as well as ever.

Mr. M. L. Read has removed his New York office from No. 198 Broadway to Room No. 3, No. 17 Maiden Lane.

Mr. Hiram Howard has offered to the Rhode Island School of Design a purse of \$25 for the best design in jewelry.

Messrs. J. M. Buffinton, H. S. Dorchester and Thos. F. Arnold

added their names to the membership list of the Union Club recently.

At the annual election of officers of the Pomham Club held last week, the following named jewelers were included amongst the number: Wm. H. Luther, President; Charles Sydney Smith and John M. Buffinton, Directors.

Mrs. Myra B. Young has been appointed administratrix of the estate of her husband, the late James A. Young, and will, with her family, make New York City her home.

Col. Theo. A. Barton, of the Gorham Manufacturing Co., celebrated his twenty-fifth wedding anniversary on Monday, October 28, and was the recipient of many rich and fine presents, besides those from the Gorham Manufacturing Co., which consisted of a silver coffee urn and salad dish.

The Rhode Island Card Board Co. has placed an attachment on the property of P. W. Rounds, of the Ideal Card Co.

The auction sale of the property of the late firm of A. J. Linton & Co., which came off recently, resulted in Mr. George Hubbard's bidding in the same in the interests of the first mortgage holder.

The failure of Fred. I. Marcy & Co., of Pine street, on November 1, had been fully discounted for some time, so that when the assignment to Mr. Wm. C. Greene was announced few were surprised at the news, while some were surprised to think that it had been averted so long. The firm was long and favorably known throughout the United States as the manufacturers of the Acme lever sleeve button. The great competition in business and depreciation of stock on hand are thought to be two of the causes for the failure. The firm commenced business about the year 1867 under the firm name of Sturdy & Marcy, and so continued for about ten years, when Mr. Sturdy retired from the concern. The business was continued by Mr. Marcy alone for about a year and one-half, when he admitted as his partner Mr. Chas. H. Smith, and the firm name was changed to Fred. I. Marcy & Co., and so continued until the death of Mr. Smith again necessitated a change. The rating of the firm has not been of the best, and some of the agencies have refused any rating whatever. The actual assets are placed at \$33,000 and the business liabilities at \$73,000. Mr. Marcy is a Director of the Rhode Island National Bank, and is also connected with the Narragansett Electric Light Co. of this city, as well as other enterprises. A committee of five was appointed yesterday to arrange a settlement.

By the failure of J. M. Chandler & Co., of Cleveland, O., Providence members of the Jewelers' Board of Trade, to the number of sixty-two, were involved to the amount of \$19,726.45. The directors of the board met at the rooms of the association and appointed Messrs. J. J. Horton, of Short, Nerney & Co., George L. Vose and N. B. Barton, a committee to look after the claims of the several members. The liabilities of the concern are put down at \$50,000, and the assets at \$45,000.

The assignee of the late firm of B. L. Hall & Co. expects to pay a dividend soon of about twenty-five per cent. The successor to this late firm will be the B. L. Hall Co., which will be conducted by a prominent out-of-town party.

Mrs. E. J. Temple, of Boston, executrix of her late husband's estate, has been settling with creditors during the past week. Mr. Temple owed members of the Board of Trade something like \$3,000, which was settled at a compromise of seventy-five per cent.

Mr. L. L. Burdon has assigned to the Burdon Seamless Wire Co. a patent ingot for manufacturing seamless wire, which is considered a great novelty in the manufacture of wire.

Mr. Wm. T. Nicholson, of the Nicholson File Co., who has just returned from a long and prosperous trip through the South and West, reports business good in the file line.

Mr. A. S. Weaver, formerly of Queen & Co., of Philadelphia, has

located himself at No. 160 Westminster street, where he will deal in optical goods.

The members of the Manufacturing Jewelers' Board of Trade have effected a settlement with the firm of E. E. Wadsworth & Co., No. 14 John street, which failed on May 31 last, the compromise being at 45 cents on the dollar, to the amount of about \$3,000 owed to members of the Board.

Jones & Spencer, jewelers, at the corner of Westminster and Mathewson streets, have found their old quarters so small as to require enlarging, which they have done by adding the adjoining store formerly occupied by Webb as a music store.

Mr. R. Epstein, who represents the firm of Veit & Co., of Gablonz, Bohemia, has been in the city the past week and found business fair, but was able to place a considerable number of orders for the spring trade.

Mr. W. H. Ryder, representing the Scovill Manufacturing Co., made one of his periodical visits to this city on Monday last, and reported business fairly good in his line.

Capt. J. L. Fowler, of the 2d U. S. Cavalry, stationed at Fort Walla Walla, Washington Ter., has been stopping at the Narragansett Hotel the past week, visiting his brothers.

Mr. Chas Downs has been confined to his home by a very painful attack of rheumatism, but is now about again.

Mr. J. B. McAdams, of No. 24 Calendar street, has retired from business.

Mr. A. Levy, of Levy Bros., Hamilton, Canada, has been in this city and placed some very fine orders with the manufacturers.

Mr. T. Riley, of late doing business at 129 Eddy street, has gone out of business.

Mr. Wm. A. Smith has started in the refining business at the corner of Cove and Mason streets.

Mr. E. O. Clarence has removed to No. 14 Page street.

The Gorham Manufacturing Co. have put in their office in this city a long distance telephone instrument, to be used in connection with their New York office via Boston.

Mr. Frank L. Wood, representing Carter, Sloan & Co., was in this city the past week in the interests of the firm.

Some fifteen or twenty Providence concerns are involved in the failure of Samuel Lowenstein, of New York, to the amount of \$3,000.

Mr. Andrew Siddals has accepted a position with the Gorham Manufacturing Co.

Godfrey & Adams have one of the finest lines of initial buttons to be found in the market, and the large sales constantly made speak well of their popularity with the trade.

The co-partnership formerly existing between Flint, Blood & Young having been dissolved by the death of Mr. Young, the firm name has been changed to Flint, Blood & Co., who will settle all claims against the old house.

FAIRFAX.

Obituary.

CHARLES S. PINE.

The death of Charles S. Pine, of Providence, occurred on Nov. 10 at his residence in that city. Mr. Pine was born in New Jersey Oct. 19, 1819. He went to Philadelphia when still a lad, where he served his time of seven years at the jeweler's trade, and became an expert workman. Some thirty years ago he established a small business of his own in Philadelphia, but competition forced him to withdraw. Later he went to Providence and entered the employ of Josiah D. Richards as foreman, and later filled the same position in the establishments of Harvey Richards, Stephen Richardson and Nathan-

iel Grant. Again with F. A. Steere and J. A. Thornton, under the firm name of F. A. Steere & Co., he went into the trade for himself, and from that time on he has met with success. A few years ago the firm dissolved, and R. L. Keach entered into the business under the name of Keach & Pine. Six or seven years ago Mr. Keach retired from the firm, and until April, 1884, Mr. Pine conducted the business alone, when George M. Church was admitted, and the firm name and style was changed to C. S. Pine & Co., at 111 Broad street. The immediate cause of Mr. Pine's death was Bright's disease, from which he suffered a prolonged attack. In the summer of 1880 he was a passenger on the steamer Narragansett which was sunk in a collision in Long Island Sound. He was one of those who jumped from the steamer and was picked up two hours afterwards exhausted. Since that time his health has constantly failed him. The exposure brought on rheumatism and kindred diseases, from which was developed the disease of which he died. Mr. Pine leaves a wife, a son and two daughters.



[FROM OUR SPECIAL CORRESPONDENT.]

ATTLEBORO, Nov. 20, 1888.

The month of November has brought a fairly good trade to the jewelers of these towns, and nearly every shop is busy. The election of the 6th, which closed the great campaign, proved very satisfactory to a large majority of the jewelers, although a few well-known manufacturers would have preferred to see the other side win. On election day most of the shops were closed, a plan which has been adopted for many years, the result being, of course, a very full vote. The manufacturers believe in giving their employees every opportunity to exercise their right of suffrage.

ATTLEBORO.

This town seems to be growing just now, and since almost the entire population is in some way connected with the manufacture of jewelry, it stands to reason that the business is growing also. There has been only one new shop erected during the present year, and one or two old firms have gone out of the business, but, taking it all in all, I believe there are more firms doing a larger business and consequently employing a larger number of men to-day than there was a year ago. This is certainly encouraging to those whose wealth is invested here.

One of the firms which seem to have made a failure of the business is the Costello Button Co. Here is an example where internal dissensions were the means of breaking up what might have proved a very prosperous undertaking. The firm owned patents on a certain machine which greatly facilitates the process of making buttons; but while everything was going along smoothly the partners had a split, and in a very short time there was a case in the courts, and last week the stock and machinery were sold at public auction. Happily, such cases as this have not been of frequent occurrence, and failures are the rare exception.

The electric lights are being introduced into many of the shops in town, and it is said they give good satisfaction.

ATTLEBORO FALLS.

This little village is always rather quiet, but the jewelry firms located here always seem to flourish. At the recent election, Stephen Stanley, of the firm of Stanley Bros., was elected a member to the General Court, having received the Republican nomination, and, at the polls, the vote of many of both parties. Mr. Stanley is a most

estimable gentleman and will be an honor to himself and the town

NORTH ATTLEBORO.

Undoubtedly the prosperity of this town has received a set back this week by the report which was rendered the railroad commissioners to the petitioners for a new railroad here. This movement has been in the hands of men, nearly all of whom are interested in the manufacture of jewelry, and it was universally felt that the needs of the town required the new road, but the commissioners have denied the petition. Business here is good; the shops are nearly all running with plenty of orders.

It is reported that some of the manufacturers here made some rash bets on the election, and the losers now wish they had thought twice.

MENDON.



[FROM OUR SPECIAL CORRESPONDENT.]

PARIS, Nov. 10, 1888.

Every year, in the middle of autumn, provincial retailers of mark come to Paris to spend about a fortnight, in order to look around and see whether the manufacturers, in whom they believe, have not something to show them besides what they have seen already in the travelers' boxes. That expected visit often appears, at the outset, somewhat trying for both, especially if the customer belongs to the remotest southern parts. His usual exuberant spirits are almost chilled at first, and, in some instances, a subdued nervousness seems to creep over him. He looks half vacantly at the goods put before him by the manufacturer, more than anxious to elicit his approval for the various patterns spread on the counter or exhibited in the glass cases. But the visitor gradually warms up and makes a few criticisms. If he be a Normand he will bargain right and left, and beat prices down with the conviction that you mean to skin him. You may attempt with so and so if you like, but with him it is of no use. He knows better. If you show him a catalogue he will refuse to look at it. They are not made for a man who can value at a glance any kind of goods, etc., etc. The Auvergnat customer takes a pitiful tone. Business with him is very bad. He has always said so and never will cease saying so. Yet he must buy something, and is ready to pay for it on the nail if your discount be a handsome one. You must, besides, accept a few Spanish and Peruvian pieces which tradespeople in his town refuse to take, he does not know why. When the bargaining is over and the order written, they take their leave with a beaming countenance and seem perfectly confident that they have outwitted you, although they half manage to conceal their feeling of triumph with a most amiable bow.

The buildings of our forthcoming exhibition rise rapidly all over the Champs de Mars. Under the direction of M. Charles Garnier, the architect of the Opera, the part of the Exposition called l'Habitation Humaine is gradually spreading along the embankment near the Iena bridge. In this will be seen all kinds of historical dwellings, arranged with perfect accuracy of style.

The Eiffel Tower will, in a few days, have reached two-thirds of its intended height. About four million francs have already been spent on it, and six million kilogrammes of iron used in building it. All the broken rivets, bolts, screw-nuts and other leavings of metal rejected by that monster, will be sent to a special factory where, being melted, they will proudly, in their turn, come to life in the various shapes of candelabra, torches, inkstands, paper-weights, etc., to be sold as souvenirs of the Exhibition.

The most striking feature of the fashions of the present day is undoubtedly the watch mania. Timepieces of small size, some of them almost microscopic, are fixed in or on a countless variety of articles or concealed in apparently useless trinkets. It seems as though we wanted, at every moment, to be reminded of the flying time so as never to be late in meeting our engagements, and yet we are anxious to make believe that it is only fun on our part. Bracelets, rings, brooches, scent bottles and umbrellas are so treated, as is well known. Then figurines and copies of things in colored metal caught the mania, and we have seen a watch stuck in the sail of a boat, on a barrel organ, with a monkey on it, or on a toy steam engine, a lilliputian lighthouse, a windmill, etc. Now we can see the severe bronze gradually yielding to the craze. A Cyclops of a perfect cast, well worthy to be admired from an artistic point of view, has a dial instead of his only eye. A clown, in his usual position, standing on his hands, while his legs are stretching upwards with a slight curve, holds a little clock between his two overhanging feet. On the top of his nose, purposely turned up, rests a cornucopia (made to receive toothpicks) having a thermometer fixed in front. Elsewhere we remark a pretty little cage in semi-polished silver, with a clock showing outside near the top, while a tiny bird, looking true to life in enamelled metal, is on a swing in motion, acting as a pendulum. We are quite prepared to see a watch in a dress coat top button, in a stud, a scarf pin, a fan, a hair comb, etc. Then, casting our eyes down, we shall look for one on a shoe in the center of the buckle. Glancing up again, we may expect to see a clock on a coachman's hat and a watch on his whip handle. At dinner parties this winter we are sure to find one in every prepared walnut instead of the usual toy or bonbon. So haunted shall we be that we shall refrain from patting our best friend on the back for fear of conjuring up one of those goblin-like timepieces. At last (an old grumbler will not fail to say) a wild excess will bring the fashion to the height of absurdity, from which it must soon fall into oblivion.

During his frequent travels, M. G. Bapst has endeavored to find some pieces of the lovely toilet sets made in the last century. He managed to discover two of them almost complete, and bearing the mark of the celebrated Thomas Germain. The first one, of a very simple and yet elegant design, belongs to the Grand Duke Alexis. It is adorned with godrons (regular *repoussé* mouldings of an elongated oval shape) and garlands of laurel leaves. As it bears neither arms nor emblems, it is impossible to tell for whom the beautiful set was made.

The second one, ordered by the King of Portugal, remained the property of the Bragance family until the French general, Junot, entered Lisbon as a ruler, at the time of Napoleon the First, when it disappeared. M. Bapst has at one place or another found most of the pieces belonging to it. The large looking-glass in silver is preserved in Peterhof palace. The arms of Portugal have been replaced by those of Russia, and the back is covered with green silk and silver lace. The Marquis de Gallard is the happy possessor of nearly all the pieces of that set, which are in vermeil (gilt silver), with the original arms.

When Princess Mathilde married Prince Demidoff, she received a very curious toilet set, made by Potemkin, the favorite of Catharine the Second. It shows a very decided effort at imitating the reigning French style.

The most remarkable toilet set of the eighteenth century must have been by far that of the Dauphine Marie-Josèphe de Saxe. It cost 600,000 livres, according to the Duke de Luynes' statement, and bore the mark of the first Thomas Germain. After the battle of Rosbach, in 1757, Louis XIV. sent (irrecoverable loss!) the whole of his silver plate to the Mint, in order to have it melted. But he would not see the above-mentioned masterpiece taken away from Marie-Josèphe and destroyed by vandals with the other artistic works of that most refined period. When the Dauphine died, her lovely set was sent to the Garde-Meuble to be preserved, together

with the jewels and engraved stones belonging to the king. The *Guide-à-Paris* of 1784 refers to the set as being one of royalty's most valuable treasures. Finally, it disappeared at the time of the first revolution, with innumerable historical relics, described at full length in records, which only serve to increase our everlasting regret.

Ladies of fashion wear, as ear rings, very pretty little lanterns in enameled gold, square in shape, with panels along the framing, and either a diamond, a ruby, a sapphire or an emerald on the hook and on the pointing base. Some of them prefer to hang at their ears a tiny poodle made of gems, with small pieces of snowy silver curling naturally over it.

We have lately seen a very curious inkstand in dull silver. It is in the shape of a hatchet, the blade of which opens from the edge up, disclosing three divisions meant to receive pens and stamps. The ink bottle fits near the hammer-looking back, which, in parting up, shows a pen wiper. A thermometer and two supports on which to rest penholders are on the tube-like handle, whose rounded base is also that of a paper knife easily pulled out.

One of the numerous attractions of next year's Exhibition will be a lilliputian steam engine made by a skilful watchmaker, who proves also to be an artist. It is evidently the tiniest machine of that kind to be seen in the world. It weighs three grammes, is a centimetre and a half in height, and consists of 180 metallic pieces. Two years were spent over that toy-like engine, which can be steamed into motion with a few drops of water, and acts as perfectly as its mighty prototypes.

JASEUR.

A Question of Bookkeeping.

In 1884 the firm of J. M. Chandler & Co., Cleveland, O., who recently failed, stated that their surplus over and above all liabilities was \$144,000.

After dissolving with Chas. Sumner in June, 1888, Mr. Chandler claimed a surplus of \$50,000 over and above all liabilities.

At the first meeting of the creditors, held on October 6th, Mr. Chandler stated as follows:

Assets:—Stock	\$40,000
Stock in Norwalk store...	9,000
Accounts receivable.....	40,000
Real estate.....	7,000
	<u>\$96,000</u>
Liabilities	63,000
Surplus	<u>\$33,000</u>

But at the last meeting of his creditors, held Nov. 15th, the remarkable statement was presented that his assets were as follows:

Good accounts.....	\$10,900
Mdse	22,170
	<u>\$33,070</u>
Liabilities.....	66,508
Showing a deficit.....	<u>\$33,438</u>

It was stated at the meeting that the rest of his book accounts, some \$30,000 were bad. No mention was made of any real estate. The merchandise in the Norwalk store was omitted entirely; but on the contrary a statement was made that the Norwalk store owed the concern \$500. No explanation was given as to why the merchandise had decreased nearly one-half, nor why the liabilities had increased \$3,000. His offer is 25 cents cash.

This case has a very suspicious appearance, and the creditors are determined to unite to put in their own assignee, and rip up the whole matter from stem to stern, as they believe that no compromise of any sort should be made with a debtor upon such showings and statements as recited above.



[FROM OUR SPECIAL CORRESPONDENT.]

BOSTON, November 15, 1888.

The agony of election is over; political uncertainty, always a menace to trade, is at an end; the public has already begun to turn its attention toward the anticipated holidays; business is growing brisk, the shopkeepers wear a smile of satisfaction that has in it an encouraging suggestion of still brisker trade, and, in a word, everything is altogether lovely at the Hub of the universe.

Although every other commercial center is feeling a similar relief from the worriments of the presidential campaign, yet it is doubtful whether any other city has recovered its equilibrium so readily as this. There is scarcely an edition of the daily papers that does not contain more or less gossip of current and coming sacrifices upon the altar of Hymen, to say nothing of the preparations for Beacon street receptions and Back Bay gatherings the coming winter, all of which goes to demonstrate that Boston's citizens are getting ready to hibernate, and that the jewelers' fraternity will be called upon to help in the season's amusements.

The delightful weather of the past week has been a welcome harbinger of prosperity.

There is now in course of erection at Faneuil, Mass., a new factory for the manufacture of the "Rivett Lathe." C. A. W. Crosby, who has been doing business for a long time as a general jewelry dealer, at 474 Washington street, is the proprietor, and Edward Rivett, the inventor of the new lathe, is manager of the concern. It is expected that the business will be started about the first of next month.

The installment jewelers of this city are meeting with very general misfortune. Some of the schemes from which they suffer have already been fully described. Suspensions and failures have resulted. This time it is Thomas B. Bragan, doing business at 319 Washington street, who has been forced into insolvency through operations of this kind. He began business in January of last year. His stock assets are \$300, while the back accounts foot up \$700. He filed a voluntary petition on October 22. And now comes the announcement that the H. A. Prentice Company, which was among the pioneers in the local installment enterprise, is going out of business largely on account of the serious losses they sustained through dishonest agents a short time ago. The premises are soon to be occupied by D. P. Ilsey & Co., who have heretofore occupied the lower story.

There will be a new firm this season at 160 Tremont street. Louis J. Wyman and Walter I. Rand, both of whom are well known to the local trade, have joined interests under the name of Wyman & Rand. It is their plan to make a specialty of society emblems.

Henry Miller, a fireman in the employ of Mr. Nelson D. Brown, the Franklin street clock dealer, was arrested recently for pawning some of the proprietor's stock in trade. His trial will come up in the Superior Court.

Charles H. Thompson and wife are languishing in Charles street jail, awaiting trial on the charge of fraudulently securing jewelry from the American Installment Company.

Word comes from Brockton that S. C. McKenney, Jr., of that place, has failed for \$35,000. The highest estimate of his assets is \$3,000, and a large shrinkage in these figures is probable. No definite offer of settlement has yet been made.

The Hanover street establishment of Alrah Skinner & Son has been elaborately re-decorated in readiness for the holidays.

Ten cents on the dollar is all that can be expected by the creditors of J. P. Harrington.

A new candidate for popular favor is Mr. A. J. Macomber, who

has opened a store at 21 Beach street. It is said that he has already had 28 years' experience in the jewelry business. He comes from Newton, Mass.

Admirers of diamonds will find an unusually elaborate display at Mr. John B. Humphrey's, 383 Washington street. He has just imported a large lot of rough which he proposes to polish and set in time for the Christmas rush.

The quarrel between the brothers Andrew J. and George H. Lloyd has been amicably settled, by the former's withdrawal of his suit for an injunction to restrain the other from using the family name in business.

The American Waltham Watch Company, the United States Watch Company and the American Watch Tool Company figured creditably in the recent campaign torchlight parades.

It isn't often that a man is arrested on his wedding tour, but the honeymoon of George B Hawkes was unceremoniously cut short in this way. Hawkes comes from West Gardner, Mass., and previous to his departure for St. Louis with his bride, is charged with having obtained \$275 worth of jewelry from Morrill Brothers & Co. on memorandum. Report has it that he offered 7 watches, so obtained, to St. Louis parties for \$100, stating in explanation that he had previously been a jeweler in Boston. His father has made a private settlement with the young man's creditors and he will be released.

Wm. George, son of Wm. Kerr, jewelry dealer, at 39 Hanover street, died during the month.

The Maynard Robbery, or the Noon Day Mystery, is still a puzzle to the police. Whitewash is a substance with which "Boston's finest" ought to be familiar, however.

The New England Plating Co. has mortgaged all its personal property to Mr. Benjamin P. Ray for \$300.

The New England Agency for C. Rogers & Brothers, of Meriden, Conn, and the Wm. Rogers Manufacturing Company, of Hartford, is held by the firm of Burden & Company. The latter have been running little more than a year, and report an enormous increase of business. Their new establishment at 31 Franklin street is a veritable hive of industry.

LEON.

The Jewelers' and Tradesmen's Company.

GILBERT T. WOGLOM, <i>President.</i>	
THOMAS A. YOUNG, <i>1st Vice-Pres.</i>	EPHRAIM S. JOHNSON, JR., <i>Sec'y.</i>
SHUBAEL COTTLE, <i>2d Vice-Pres.</i>	SAMUEL W. SAXTON, <i>Treasurer.</i>

BOARD OF DIRECTORS.

JAMES A. SMITH,.....	M. B. Bryant & Co.
EPHRAIM S. JOHNSON,.....	Treasurer, E. S. Johnson & Co.
SAMUEL W. SAXTON,.....	President Solid Link Chain Mfg. Co.
CHARLES A. FOWLER,.....	Fowler Bros.
JOHN C. DOWNING,.....	Downing & Keller.
SHUBAEL COTTLE,.....	President S. Cottle Company.
THOMAS A. YOUNG,.....Ex-President National Association of Commercial Travelers ;	
Chairm'n Legislative Committee and Vice-President of the Commercial Travelers'	
Asso'n, State of N. Y. ; President Traders' and Travelers' Union.	
CHARLES F. ROBERTS, M. D.,.....	Medical Director, 69 E. 54th St., N. Y. City.
SAMUEL A. BALDWIN,.....	W. E. White & Co.
GILBERT T. WOGLOM,.....	Gilbert T. Woglom.
WILLIAM B. KERR,.....	Kerr & Battin.
SAMUEL SONDHEIM,.....	D. & M. Bruhl.
Superintendent, BENJAMIN O. LAMPHEAR,	
Counsel, JAMES M. HUNT,.....(of Rudd & Hunt) 31 & 23 Pine Street.	

During the last month the following members have joined: Edward H. Unkles, with T. B. Starr; Charles Barthoulet, with Henry A. Goll, Henry Dreyfus, Robert A. Fowler, Henry W. Benedict, Anton Seifert, Gustav Maag, Frank A. Moran, John F. Sarle, Robert Schaefer, Abner M. Dexter, with U. S. Express Co., Karl F. Spitz, Alpha D. Huntington, Benjamin S. Wise, with Goldsmith & Co., Robert Heerbrant, Thos. H. Dobinson, Peter Axmacher with T. H.

Dobinson, Edward Ruhl, Gottlieb Levy, Geo. W. Mecum, Medford, Mass.

THE "AGEING" FEATURE OF ASSESSMENT INSURANCE.

The "ageing" feature of the assessment system of the Jewelers' and Tradesmen's Company is one which will be interesting to discuss, if only as an incentive to a study of the requirements of equitable assessment insurance. The word "ageing" in its application ingeniously expresses the idea. We say a man "ages" as he increases in years, the word "age" being synonymous with "increase." "Graduated," as applied to assessments, is well understood, but does not in itself convey the idea of assessments being increased proportionately with increasing age, supplemented by a word conveying the latter idea; therefore, "graduated and ageing," in the *double entente* of the latter word, clearly convey the idea that as one grows older his assessments increase proportionately.

Now, as to the application of the idea: If a number of men combine, each ready to meet the exigencies of life insurance on the assessment plan, each conscious of bearing no other member's burden unjustly imposed, the equity, the fairness of each member's relations to each other member will hold that number of men together, each ready to discharge his obligations in return. It is safe to presume that each desires the element of permanence to be co-equal with that of equity and cheapness. A membership built upon the absence of features likely to effect persistence may be expected to show a large ratio of discontinuance. Especially important then is the necessity for prominent features in assessment societies to obviate that tendency and establish their permanency.

The question of assessments, graded according to age, has agitated most of the societies organized years ago, and one by one they are falling into line with more or less accuracy in their plans: some, too timid to take the matter boldly in hand and adjust their assessments upon scientific principles, have adopted compromise plans, a trimming, half-way grading, which must, in the lapse of years, inevitably require a re-trimming. All are agreed that the grading of assessments is necessary to permanence. A graduated scale being granted as the key to permanence, there is a step further, and that is to increase the assessments in size as the individual advances in age, *i. e.*, graduated and ageing assessments. These two propositions must accompany each other and cannot be separated in their consideration, for both rest upon the same inexorable law of our being, and every argument which upholds the one strengthens the other. They are inextricably interwoven. Whatever proves the necessity for grading the rates also proves the necessity for increasing them with the advancing age of the member; thus the older men are required to pay an equitable rate per head for being insured, and they carry themselves by paying for themselves, without being a burden to the younger man who costs less to carry by reason of his lesser average risk of death. Assessment rates fixed by an accurately figured experience, ensures mutuality and provides life insurance as a commodity at its actual cost. If it were provided at a profit to the insurer some little risk might be taken in older men; but when that commodity is annually offered at its cost for the current year, and one will not or cannot pay its cost, he must step aside and give place to one who will.

Many a young reader of this will quickly exclaim: "But how can I know that I shall be able in advanced life to pay these increasing mortuary calls?" An assessment society may furnish life insurance, but it does not undertake to also provide the personal ability and economy, nor can any known system of insurance undertake to insure the prosperity requisite for paying the actual cost of carrying each of its members in either earlier or later years. Furthermore, if it is such a "pat" question as to the future years of one's life, why not just as pertinent a query, "How can I be assured of my ability to pay for mortuary calls this year or next year?"

A man at sixty years of age who has in his earlier life clothed himself in \$50 suits, finds himself unable to buy better than a \$25 suit,

but he would not expect his tailor to continue to provide him for \$25 with \$50 suits, either because of such inability or because he had theretofore bought \$50 suits. He must pay what the suit is worth.

Secretary J. A. Stoddard, of the Northwestern Masonic Aid Society, a careful student of assessment insurance, writes:

"Young men jump hastily to the conclusion that to advance their rates with advancing age will make their insurance cost them more. The truth is, it will make it cost them less than it otherwise must. The old men, among whom the death rate increases much faster, will be obliged to pay for such increase, and thus all will be equitable and fair. But if there is no advancing of rates, all must contribute alike in paying for the added number of deaths, by each paying more assessments. The true policy is to assess each man a larger amount just in proportion as his risk increases, and thus create an extra fund out of which the extra death losses can be paid without assessing for them, and thus the number of assessments per year be kept the same as at first."

The Jewelers' Security Alliance.

President, DAVID C. DODD, JR.

First Vice-President, AUGUSTUS K. SLOAN.....Of Carter, Sloan & Co.

Second Vice-President, HENRY HAYES.....Of Wheeler, Parsons & Hayes.

Third Vice-President, DAVID UNTERMAYER.....Of Keller & Untermeyer.

Treasurer, W. C. KIMBALL.....Of Strange & Brother.

Secretary, GEO. H. HODENPYL.....Of Hodenpyl & Sons.

EXECUTIVE COMMITTEE.

J. B. BOWDEN, Chairman.....Of J. B. Bowden & Co.

C. G. ALFORD.....Of C. G. Alford & Co.

N. H. WHITE.....Of N. H. White.

CHAS. G. LEWIS.....Of Randel, Baremore & Billings.

F. KROEBER.....Of F. Kroeber Clock Co.

SILAS STUART.....Of Silas Stuart.

EXAMINING FINANCE COMMITTEE.

EDWARD SMITH.....Of Smith & Knapp.

A. JORALEMON.....Of A. Joralemon & Co.

For further information, Application Blanks for Membership, By-Laws, etc., Address
P. O. Box 3277. 170 Broadway, New York.

The regular monthly meeting of the Executive Committee was held at the Alliance office on the 9th inst. There were present Henry Hayes and David Untermeyer, Vice-Presidents, J. B. Bowden, Chairman, Messrs. Alford, White, Lewis, and Geo. H. Hodenpyl, Secretary.

The following were admitted to membership: A. G. Stone, Montpelier, Vt, cor. Main and State streets; G. S. Strout, 32 High street, Clinton, Mass.; M. Parse & Co., 124 Main street, Pine Bluff, Ark. Ross Bros., Calais, Maine; Perley Chandler, 73 Main street, Barre, Vt.; W. H. Thorpe, James street, Clayton, N. Y.; Wentworth & Co., 509 Congress street, Portland, Me.

Where Amber is Found.

By F. R. KALDENBERG.



THE ONLY place in which amber has been found in paying quantities is in the Baltic Sea, and the vein extends from western Russia to Denmark, Norway and Sweden. In former years the production of amber depended principally upon the storms occurring in the winter time, for when the sea was convulsed the amber lying on the bottom was thrown up on the shore; but human enterprise, stimulated by the demand for the article, has changed all this, and for the last twenty-five years various engineering appliances have been used for getting out the amber in the quickest and cheapest way.

The most profitable strata have been found in the Courischer

Haaf, which is located in the vicinity of Memel, and there are twenty large dredging boats constantly at work day and night for eight months in the year. There are large strings of iron pails that are constantly dragging along the bottom of the sea, and bringing up the sand and what amber there may be in it. This is emptied on the deck of the ship, and there it is washed and the amber picked out from among the sand and stone.

The little village where this industry is carried on is called Schwartzort. It is situated on a narrow strip of land that extends about ten miles beyond the main land, and is, perhaps, a mile wide at its widest part. At one time this strip of land was covered with a forest, but the wood was sold off by a Prussian king in the beginning of this century to the Russians. The land has become barren since stripped of its sheltering forest, and now it is nothing but a sandy waste; and, were it not for the amber industry, this beautiful peninsula would be desolate. About ninety miles further west is another little village called Palmnicken, and here the amber is obtained in an entirely different manner. The most approved diving apparatus is used, and the divers go out in rowboats, each of which is fitted with an air pump. They go down into the sea, where some of them remain as long as four or five hours. Each diver has a little bag around his neck and a peculiar hook with which he pulls up sand, and every piece of amber that he finds is thrown into his bag. An encouragement to the diver is that if he finds a piece of amber he is entitled to a prize of ten, twenty-five or fifty cents, according to the size.

While the divers are below in the sea, engaged in hunting for the amber, the miners are just as busy on land, for it seems that the same stratum of the green sand runs, perhaps, for thirty miles or more into the land. The opening of the mine is, perhaps, a thousand feet from the shore, and it is necessary to go down about one hundred and fifty feet, which is some thirty or forty feet below the level of the sea. To keep the mine as dry as possible, there are several pumps working day and night; and to prevent the earth from falling in, the passages are propped up by logs of wood. There are about forty miles of passageway in these mines, and there are about seven hundred men employed for the various departments. As soon as a passageway is opened a track is laid, and on this track there runs a little truck which holds perhaps half a ton of sand. The miners simply cut out the sand and fill the truck. It is then brought to the surface, where the whole contents is thrown into a long trough filled with rushing water, which separates the sand from the amber, which is caught by nets of various sizes. The amber is then cleaned by machinery, and assorted according to its quality and purity. The writer believes himself to be the first American who ever went down into the amber mine.

SWINDLING.—"The world wants to be swindled," was said by a Latin poet several thousand years ago, and humanity has not changed one whit since then. The daily press records the perpetration of swindles day after day—some of them so gross and palpable that one cannot really decide what to admire most, the stupidity of the swindle or that of the party swindled. Some time ago a firm in Brussels advertised that agents would be appointed in every country on the globe provided they would send in a deposit of 250 francs, upon the receipt of which they would be appointed and a large selection of watches sent them. The Post Office department says that the swindlers received letters by the bushel. After a length of time the fraud was exposed, but letters continued to arrive daily, and fully ten thousand of them were found in the deserted office. Our informant says "that only yesterday" (fully a month after discovery) "30 money letters were received; if each of them contains 250 francs, it may be accepted that the swindlers' receipts averaged 7,500 francs per day."



MALLEABLE BRONZE.—Dromier has discovered that bronze is rendered malleable by adding to it from one-half to two per cent. of mercury.

TO PERFORATE GLASS.—In drilling glass, stick a piece of stiff clay or putty on the part where you wish to make the hole. Make a hole in the putty the size you want the hole, reaching to the glass, of course. Into this hole pour a little molten lead, when, unless it is very thick glass, the piece will immediately drop out.

TO HARDEN COPPER.—Mr. Everett gives the following recipe for hardening copper and copper alloys: Melt together and stir until thoroughly incorporated, copper and from one to six per cent. of manganese oxide. The other ingredients for bronze and other alloys may then be added. The copper becomes homogeneous, harder and tougher.

TO ALTER DEPTHS.—The center and third, and third and fourth wheels are usually corrected by driving the third bridge in the required direction, as the third cock governs both depths. Either or both can be made shallower or deeper at pleasure. The barrel depth may be altered by driving in the same manner.

TO FINISH THE STEEL PARTS OF STEM WINDERS.—This is to be done by rubbing the parts in a short circular motion with a piece of glass dipped in oil and fine oilstone. They should then be washed with Castile soap and hot water, and, when dry, placed on a piece of soft lead to receive the finish. Lay a sheet of fine, sharp emery paper over the parts, and place another piece of lead, perfectly flat, on the paper. Take the lead briskly with a light hammer, and a fine silvery-looking surface, to which dirt will not easily adhere, will be obtained.

TO SOLDER IN A TOOTH.—Some watchmakers have an aversion to soldering in a tooth, even in a common clock, and are decidedly in favor of riveting and of banishing solder and the soldering iron from the bench. Riveting, however, has its decided drawbacks, not the least of which is the fact that if performed by an unskilful (and it will happen occasionally to a skilful) person, the wheel will get out of true. Soldering, if moderate heat has been used, is entirely harmless, and if care has been taken to fit the brass exactly to the dovetail, the solder will not show much when the sides are polished off (we speak now of a clock wheel). The tooth or teeth may now be formed in the new brass that has been inserted into the wheel, and if done in conformity with rules of neatness and skill, the wheel will for all practical purposes be as good as new.

TO BEND A WIRE GONG.—Proficient watchmakers all know that the bending of a gong wire in a repeating watch has the effect of considerably impairing the sound. The common practice of beating the spring with a view to restoring the tone, is only partly efficacious. If the spring touches at any point on the outside, it must consequently be bent inward. It should be laid, at the place where it is to be bent, upon a convex piece of brass corresponding in shape with the inner side of the spring, and if the outside be lightly touched with the sharp edge of the hammer, the small indentations produced by bending will be taken out, and the outside will be lengthened and the inside caused to contract in proportion. This change of form will be very gradual, and the atomic disturbance being spread over a large area will not affect the tone. The more a spring is bent to and from in every direction the more it will lose its elastic force. It is for this reason that a beginner will often destroy a spring by overmanipulation. In the case of soft springs care should be taken to make any change of form gradually.

GOLD SOLDER FOR 18 KARAT WORK.—Fine gold, 1 ounce; fine silver, 7 dwts.; copper wire, 4 dwts., or 3 dwts. of copper and 1 dwt. of composition instead of all copper.

PAPIER MACHE.—To make papier mache for fine small work, boil clippings of brown or white paper in water, beat them into a paste and add glue or gum, and size or press into oiled mold.

TO COLOR COPPER.—To produce a dark brown color upon copper, take the white of an egg, beat it into a froth, add a little boiled or rain water, and add to this mixture *caput mortuum* (red oxide of iron); rub them well together in a mortar until the color covers, and it may then be applied. The copper article is to be pickled and then simply washed; no sand must be used, else the color adheres badly. The latter is next applied with a brush until it covers the surface; it is then dried by fire; the article is gently rubbed with a soft rag and said red oxide of iron powder, and finally hammered with a hammer with polished surface.

THE FILE.—It is a serious error to leave a file packed full of filing dust. The cuts can be easily broken out by this lodging, without considering that this dust will produce deep scratches upon the article filed. If the file brush is unable to take it out, use the sharp edge of a piece of brass (wire, etc.), but never steel, to press the dust out in the direction of the cut. Places treated in this manner will invariably fill up again unless a little oil is applied in the grooves, to be repeated from time to time. If a file tooth has become lodged in the piece of work being operated on, it is to be dug out either with a small chisel or the point of a graver.

THE EQUIPOISE OF THE FORK.—Be sure to have the anchor fork well equipoised; too long and too heavy forks will cause many difficulties. It cannot be said that the lifting of the fork in certain conditions influences the rate much, because the reverse motion neutralizes the defects of the first, but sudden jolts and jars are apt to be followed by a premature drop, which is the principal danger. It happens often that the knife by a sudden striking of the roller is held fast, or passes through by bending and breaking a balance pivot, or causes other less hurtful irregularities. When establishing the counterpoise, fearlessly file down the heavy shoulder generally found in forks that are too long, and diminish the size of other parts which are too heavy and disproportioned. After it has been established, only the anchor is necessary to prevent a premature drop. A movement in which the locking angles are wanting entirely is but seldom found, and by establishing the counterpoise of the fork many a defect is removed which many a repairer has in vain sought to remedy. To re-shellac the pallets is a doubtful piece of work, and one that may cause many other and greater evils; never forget the exact mathematical construction of the escapement.

TOO LARGE A PINION.—A watch is more likely to stop with a pinion too large than too small. A rough and ready way to size wheel and pinion is to gauge three or four teeth of the wheel with the pinion gauge, and see that the same number of leaves of the pinion have fair shake.

BAD DEPTHING.—We would urgently advise the young repairer not to wait until a bad depth stops a watch before altering it, as it invariably injures the wheel teeth, if shallow, before doing so; but having a good idea of the right amount of shake, always endeavor to secure it by the ready means at disposal in all Swiss watches.

OLD CLOCKS.—In the very oldest clocks we seldom see much wear on the teeth of the wheels, if the depths have been right when the clock was new. Sometimes a tooth or a few teeth get broken by accident, and can be easily replaced in most instances. When a tooth or teeth have to be replaced, the most desirable method is to dovetail a piece of brass into the rim of the wheel of the requisite size, and fasten it by soft solder that will flow at moderate heat. Soldering will be found preferable to riveting.

A GOOD ALLOY.—Nine parts of fine gold mixed with one part of platinum will nearly have the color of gold but the density of platinum, and possesses great elasticity, which makes it a valuable alloy for dental springs. A good alloy for writing pens, not being exposed to corrosion, is made of four parts of platinum to three of silver and one of copper.



TRADE GOSSIP

The following named members of the trade were noticed in town since our last issue: J. F. Seely, Ogdensburg, N. Y.; W. L. Hoskins, Owego, N. Y.; F. Rolshoven, Detroit, Mich.; W. W. Wattles, Pittsburg, Pa.; L. Furtwangler, Greenberg, Pa.; M. W. Galt, Washington, D. C.; Mr. Tapken, of Tapken & Miller, New Brunswick, N. J.; J. L. Hicks, Fall River, Mass.; Geo. C. Allis, Birmingham, Conn.; E. M. Munger, New Haven, Conn.; Louis Selig, Elizabeth City, N. C.; Mr. Bauer, of T. J. Walker & Co., Hagerstown, Md.; W. S. Hough, Collinsville, Conn.; H. L. Parker, Lyndonville, Ver.; Geo. Waters, Scranton, Pa.; C. P. Forbes, Greenfield, Mass.; C. B. Marsh, Binghamton, N. Y.; D. F. Fero, Corning, N. Y.; I. Alex. Hardy, Pittsburg, Pa.; W. D. Upson, Waterbury, Conn.; G. H. Durussel, Owego, N. Y.; C. H. Solomon, Macon, Ga.; J. H. Grant, Troy, Pa.; A. M. Jewett, Cortland, N. Y.; F. G. Wilson, Ithaca, N. Y.; Andrew H. Schilling, Oswego, N. Y.; E. S. Pendexter, Portland, Me.; Mr. Donnell, of Eckert & Donnell, Buffalo, N. Y.; G. C. Case, Jackson, Mich.; Sheldon Swope, Terre Haute, Ind.; Felix Strouse, Pottsville, Pa.; Frank Rogers, Gloversville, N. Y.; E. Peabody, Pawling, N. Y.; F. L. Wilson, Danbury, Conn.; F. L. Mix, Troy, N. Y.; E. E. Isbell, Cincinnati, O.; Addison Hubbard, Cleveland, O.; R. H. Galbreath, Cincinnati, O.; R. B. Gray, San Francisco, Cal.; G. W. Fairchild, Bridgeport, Conn.; I. G. Dillon and Charles N. Hancher, Wheeling, W. Va.; H. Semken, Washington, D. C.; D. H. Buell, Hartford, Conn.; G. W. Ludwig, Chambersburg, Pa.; Mr. McEachron, Hoosick Falls, N. Y.; D. W. Cleveland, Rochester, N. Y.; E. Jarecki, Erie, Pa.; Nelson Shafer, Coblesville, N. Y.; E. P. Durando, Chattanooga, Tenn. Wm. Mitchell, Amsterdam, N. Y.; J. H. Crosby, and William Fuller, Jacksonville, Fla.; Mr. Fulmer, of Fox & Fulmer, Easton, Pa.; J. E. Bell, John Seely, Ogdensburg, N. Y.; O. E. Curtis, Decatur, Ills.; V. Schopperle, Oil City, Pa.; J. C. Herkner, Grand Rapids, Mich.; James Mix, Albany, N. Y.; J. H. Hutchison, Portsmouth, N. H.; Robert Leding, Washington, D. C.; R. F. Polack, York, Pa.; F. L. Wilson, Danbury, Conn.; J. B. Capron, Bridgeport, Conn.; J. H. Heim, Sunbury, Pa.; J. W. Wagner, Millintown, Pa.

—W. O. Story, Hillsboro, N. H., wants to buy a copy of "Excelsior's" Treatise on the Balance Spring.

—George W. Ludwig, of Chambersburg, Pa., is making extensive alterations and improvements to his store.

—Mr. D. De Sola Mendes arrived home from Europe during the recent storm which created havoc among the shipping. He says the voyage was very rough.

—The New York Standard Watch Company, 83 Nassau street, has just put in a large safe, weighing 8,000 pounds, made by Mosler, Bowen & Co., of Cincinnati, Ohio.

—Mr. Sweet, with L. H. Keller & Co., who has been severely ill for some time, is now back again at his post. His illness was due to nervous prostration brought on by overwork.

—Frank W. Hall, of Minneapolis, Minn., has opened a retail store in partnership with A. G. Tellner, at Jamestown, Dak., having bought out the fixtures of Houghton & Williams at that place. The business will be run under the style of A. G. Tellner & Co.

—George Katz, a jeweler, of 1,929 Germantown Road, Philadelphia, was recently the victim of an adroit swindler named George Holmes, through whom he loses a gold watch, a diamond ring and several smaller articles of jewelry.

—A. E. Burnett, foreman of the jewelry job room at the Hampden watch factory, recently gave up his position on account of ill-health, left for Florida, where he will engage in mercantile business. He had been with this company fourteen years.

—Dealers in fine goods coming to town to make holiday purchases should not fail to visit the establishment of S. Klaber & Co., 47 West 42d street, who manufacture a line of Mexican onyx pedestals, tables, lamps, etc., such as cannot be found elsewhere. The varieties of onyx used by this firm are peculiarly beautiful. There are but two varieties of onyx used, and of these S. Klaber & Co. have the exclusive control, being directly interested in the quarries from which they are taken.

—Geo. H. Richards, Jr., & Co., of Boston, have issued a new price list of American watches and watch cases. It is a neatly printed little book, pocket size, and contains besides the price list much information that will prove useful to the entire trade.

—The United States Watch Company, of Waltham, Mass., is said to be contemplating the erection of another building or an additional wing to the present one. A new 18 size hunting movement has been put on the market, and the tools are now being made for the construction of a 6 size ladies' watch.

—The death of L. H. Keller does not virtually affect the firm of L. H. Keller & Co. The business will be continued as before under the same name. A new partnership was formed November 1 by Mrs. Frances Keller, who is sole legatee and executrix of her late husband's estate, and Frederick J. Boesse, who was a partner in the late firm.

—Mr. Wendel F. Foster, the author of an article entitled "Old Ways *versus* the New," which appeared in THE CIRCULAR for November, has opened a store at 308 High street, Holyoke, Mass., with a fresh stock of watches, jewelry, silverware and optical goods. Mr. Foster is a skilled watchmaker, and once held the position of inspector on first quality work at the American Waltham Watch Factory.

The New York Jewelers' Cleveland and Thurman Club had a banquet on the evening of November 17 at the Restaurant Frascati. Though this organization was unsuccessful in the recent "campaign of education," the members took their defeat good naturedly and have faith in the ultimate success of the principles they represent. The banquet was a social success, and a committee of five was afterwards chosen to arrange for the permanent organization of the club. There were present at the banquet W. L. Sexton, C. E. Settle, C. A. Boynton, J. C. Rising, R. A. Johnson, B. W. Ellison, J. M. Dayton, Henry Carter, A. G. Funck, C. E. F. Lewis, Austin Granberry, D. W. Granberry, W. J. Duffy, David Keller, S. Cottle and G. H. Hodenpyl. Mr. Duffy was presented with a handsome cane by the club in recognition of his services in its behalf.

—Joseph Dankworth, a clerk of Kiefer & Deschamps, of Philadelphia, was arrested on November 16, charged with having stolen \$2,000 worth of diamonds from his employers. Dankworth was given a position with this firm about three or four years ago, having come highly recommended. He was a bright young man and soon gained the confidence of the firm. But when, recently, they discovered a discrepancy in their books, they suspected the young man of theft, and later the proof of his guilt became clearer, and he was arrested. When charged with the crime he made a confession, and handed over a lot of pawn tickets for the stolen goods. Kiefer & Deschamps expect to recover their property. On the afternoon of the same day that Dankworth was arrested another warrant was issued for his arrest on complaint of S. M. Simpson, 316 South street, charging him with obtaining three gold watches through false pretenses.

—The manufacture of opera glasses can now almost be classed as one of the fine arts, so exquisite is the workmanship of their mountings. The large Parisian manufacturers continually vie with each other in producing new and tasteful designs, and Audemair, one of the most celebrated manufacturers, has succeeded in placing upon the market a line of glasses mounted in designs which have seldom been equalled. Oxidized silver, aluminum chased in excellent style, mother-of-pearl in its many varieties, and all kinds of plain and fancy leather, are some of the styles of mountings used, and when the quality of the lenses used in these glasses is considered, the prices at which they are offered is decidedly low. These glasses are all encased in handsome morocco cases, satin lined. As is well known to the trade, the Spencer Optical Manufacturing Co. are the sole agents in America of these celebrated Audemair opera glasses, of which they are now showing a large line especially suitable for holiday trade.

—J. D. Wiggins has removed from Dundee to Farmer Village, N. Y., where he has started a new business.

—Karl Ferdinand Gotthold, a jeweler and expert optician, of Newark, N. J., died on November 15 at the age of seventy-three.

—Ketcham & McDougall's celebrated thimbles and solderless collar button are staple articles, for which there is reported a large demand at present.

—Carter, Sloan & Co. are having a brisk trade in novelties, of which they have produced a large line this fall. Out-of-town dealers are invited to inspect these goods when in town. They are especially adapted for the holiday trade.

—"The Hebrews in America," a large and well made volume by Isaac Markens, gives Mr. S. F. Myers a very fine notice. Mr. Markens estimates the amount of Hebrew capital in the jewelry and diamond business in the country at \$25,000,000.

—F. P. Kurtz, of 97 Cliff street, manufactures a line of jewelers' machinery and tools, including rolling mills, lathes, dies, etc. Dealers in need of any articles of this kind should apply to Mr. Kurtz for a copy of his latest catalogue, which he sends free.

—M. L. Strasburger, the Paris representative of Louis Strasburger & Co., has been in New York during November and will return to Paris shortly. Just before his recent departure from Paris he sent his firm a large shipment of well-matched pairs for the holidays.

—Thomas C. Garrett, of Philadelphia, a well-known business man, died on November 17, at the age of eighty-three. About 1830 he started in the jewelry business, which he carried on until 1863, when he sold out to Mr. Biddle, the predecessor of Bailey, Banks & Biddle.

—Chauncey Goodrich, who was a wealthy clock manufacturer many years ago at Bristol, Conn., recently attempted suicide in Brooklyn. He was once a State Senator in Connecticut, but lost his fortune in Wall street speculations, and his friends have gone with his wealth.

—About noon on Wednesday, Nov. 28th, a novel incident occurred on Maiden Lane. A truck heavily laden with huge Connecticut turkeys stopped before the store of S. F. Myers & Co., and the entire cargo was distributed among the employees of the firm as a Thanksgiving offering.

—The Hartford Silver Plate Company have salesrooms in Hartford, Philadelphia, Chicago and St. Louis, as appears in their advertisement, and dealers who desire to see the line of goods made by this company, which is especially large in holiday attractions, should note these addresses.

—Hollinshed Bros, of Philadelphia, have just refitted their office and put in another safe. On account of the increase in their business they have taken into their employ Mr. Geo. W. Custer, for eight years with McCarthy & Hurlburt, and well and favorably known throughout Pennsylvania and Ohio.

—Mr. C. Kronske, the gold and silver plater, of 223 Grand street, has excellent facilities for doing first-class work of this kind promptly, at low prices. He began business in 1873, since which time he has gained the confidence of a large number of patrons. The trade is advised to give him a trial.

—The Gorham Manufacturing Co. have an announcement in our advertising pages this month to which attention is called. Dealers can find anything in the line of silverware at Gorham's, where everything is made in the best of taste, after the most artistic designs and according to the very latest decree of fashion.

—Henry Welf, president of the Ohio Retail Jewelers' Association, was recently chosen the purchasing agent for the members of that association. This plan of doing business was determined upon at the late meeting in Cincinnati. Mr. Welf, therefore, should be addressed upon all matters relating to this branch of the association's business.

—The Riley-Osborn Mfg. Co. find a very good demand for their line of toilet articles, which they recently brought out partly for the purpose of cultivating the patronage of the jewelry trade. Their general line of brass goods, fancy onyx tables, etc., is one which jewelers can profitably handle.

—The New York Jewelers' Board of Trade and the Chicago Jewelers' Association have decided to co-operate in the transaction of their collection business. This will give the members of both organizations the benefit of the other's aid, and will render them more useful than ever in the work they are conducting.

—Wood & Hughes, the old established silversmiths, are having quite a run on a line of fancy articles, such as water sets, toilet sets, etc., of which they have a variety of handsome patterns in etched and *repousse* silver. In berry spoons and like articles requiring fancy handles, they have produced such excellent patterns that they are now putting these same patterns on complete sets of flatware.

—Jenkinson & Schelly, of Chicago, Ill., recently reported to the police that they had been robbed of eleven gold watches and two diamond rings, in broad daylight. To their surprise, a few days later, they received from the police twenty-one watches instead of eleven, besides the two rings. The watches were all identified by the firm as their own, but in some unaccountable manner they had only missed eleven. The manner in which the watches were recovered was a remarkably clever bit of detective work. Suspicion was fastened upon George Henderson, alias Davis, a well-known character who had been caught in similar thefts, and he was captured and charged with the crime. In a few days he confessed, and named the place where he had secreted the goods. Davis said he entered the jewelry store between four and five o'clock in the afternoon, when both proprietors were sitting there reading. Securing his plunder he escaped without attracting their attention by the same way he entered—the front door.

—An English exchange, in writing up the Barcelona Exhibition, says that there are a half a dozen exhibits from North America. "C. Lugano, Kingston, shows spectacles, opera glasses, etc.; W. D. Chase, New York, several small alarm clocks of various sizes and designs; W. S. Hough, Providence, R. I., some scores of lockets, in great dissimilarity, made of aluminum; Seery Manufacturing Company, Providence, many dozens of watchguards, made in all possible manners, constituting a brilliant, although small representation; Self-Winding Clock Company, New York, four large size clocks of handsome construction; Manhattan Watch Company, New York, a couple of round cases containing aluminum and nickel watches located on a big stall adorned with four clocks (also the concern's productions), the effective exhibit looking well below the attractive canvas of the Giant Tree of California, through which a wagon and six are represented as passing. Lastly may be paragraphed the good show-off of bronzes made by the American Manufacturing and Supply Company, New York."

—The well-known house of Wm. H. Ball & Co., bracelet manufacturers, 15 John street, are showing an unusually large line this fall, including a great variety of knife edge patterns from solitaire to twenty settings; curb chains, with both padlock and snap attachments; trace chain bracelets, round and square link, and (a new departure for them) a line of combination brooches and pendants mounted and unmounted. Their bracelets are all provided with a patent safety guard—a sure preventive against loss, and hence indispensable for a valuable diamond bracelet. This house is one of the oldest in the jewelry business, having been established in 1841. A few years ago they had a very extensive reputation for flat band bracelets, so extensive, in fact, that to this day some persons in the trade cannot remember, in speaking of the house, that flat bands have long since gone out of fashion. When the building at No. 9 John street was destroyed to make way for the handsome new structure now being erected on the corner by Austin Corbin, Messrs. Ball & Co. vacated an office which they had occupied for twenty-five years.

—J. L. Cline, of Portland, Ore., has succeeded Cline & Hartley.

—Brown & Maxcey, of Austin, Texas, have made an assignment.

—John Broadhead, of Marshalltown, Iowa, has removed to Morrison, Ill.

—W. E. Pierpont, formerly of Waterbury, Conn., has removed to Naugatuck.

Leopold Strouse, formerly at St. Paul, Minn., has removed to Portland, Oregon.

—George A. Durussel has succeeded the firm of L. F. Durussel & Son, Owego, N. Y.

—A. D. Oliver, of Lowell, Mich., has admitted a partner, and the style now is A. D. Oliver & Co.

John Rudd, of Omaha, Neb., has admitted Mr. Lund into partnership, and the new style is Rudd & Lund.

F. S. Balster, of Emporia and Herrington, Kansas, has sold out his Herrington store to W. H. Fisher & Brother.

—Charles Wessels, of Aitken, S. C., has admitted a brother into partnership, and the style has become Wessels Bros.

—The William L. Gilbert Clock Co. has just brought out a fast selling nickel carriage clock, called the "Graduate." It has an alarm attachment.

C. E. Carpenter's jewelry store at Horseheads, N. Y., was burglarized on November 10. The burglars succeeded in carrying off \$200 worth of jewelry.

—Shaefer & Egenberger, of 69 Nassau street, are doing well with their new "Marquise" ring, an illustration of which will be found in their advertisement.

—H. J. Couse, for the past five years with Martin Copeland & Co., and formerly with Carter, Sloan & Co., has made arrangements to represent Wm. Riker on the road.

—Albert Lorsch & Co. are very busy in their Providence stone department. Notwithstanding the large force of men at work in the factory, they are compelled to work nights to fill orders.

—J. Briggs & Sons, of Providence, R. I., manufacture a line of supplies for manufacturing jewelers. A list of some of the articles they make appear in their advertisement, to which attention is directed. This house was established in 1849, since which time their goods have justly achieved a good reputation.

—The window displays of J. M. Goddard and E. A. Thrall still continue to be one of the attractions of the Lane. Here the passer-by is always sure to find some new arrangement, some odd and fanciful design that bears testimony to the enterprise and ingenuity of those who have charge of this important department within.

Henry Abbott, 4 Maiden Lane, has a novel advertisement in this issue, in which appears an illustration of an "attachment"—not a stem winding attachment, by the way, but nevertheless illustrating the merits of Mr. Abbott's famous stem winding attachment. A list of the movements to which it may be fitted is given.

—Attention is called to the advertisement of B. & W. B. Smith, manufacturers of architectural wood work, show cases, etc. The large number of jewelry firms throughout the country whose establishments have been fitted up by this firm, are a standing recommendation of the quality of their work. Their show cases are surpassed by none in artistic and durable qualities.

Charles F. Wood of late years has been going more and more extensively into the precious stone business, and has already established himself upon a successful basis. He now imports his goods directly from European markets, his brother, J. B. Wood, making periodical trips to the other side for that purpose. Mr. Wood's specialty is small colored goods of fine quality. In these and in rose diamonds, small brilliants, etc., he invites comparison of his stock with those of older dealers. Attention is called to Mr. Wood's advertisement which appears in this issue.

—The Charles Stark Company, limited, is the title of a corporation lately formed at Toronto, Ontario, to continue the catalogue business formerly carried on by Charles Stark. The provisional directors are Chas. T. Stark and Frank S. Taggart, and the capital stock is \$200,000. Mr. Stark went into business 12 years ago in a small way, with one clerk, now he has five separate departments and 60 clerks. He has been manufacturing silver watch cases and a line of jewelry.

—Wm. D. Rogers, a jeweler of Norristown, Pa., recently had an exciting tussle with three men who attempted to rob his store. They entered and asked to be shown some rings, when one of them threw Mr. Rogers upon the floor, while the others attempted to open the show cases. Mrs. Rogers then appeared on the scene, running to the street and shouting for the police. The excitement became so great that the three men escaped, having been unsuccessful in their design.

—William Riker, 860 Broadway, is introducing a patent sleeve button which has decided merit. It is an improved spiral back button, with the post so cut down in the inner angle of the spiral that the point does not have to be lipped to catch the buttonhole. It cannot work out of the buttonhole by any mischance and turns in and out with equal ease. Illustrations of this latest achievement in button making will be found on another page, and also the particulars of a prize offer the firm are making to the retail trade—\$50 in gold to the jeweler sending the most old buttons to be changed to their latest patent. William Riker also makes a specialty of enameled flowers, and in natural delicacy of tint and variety of styles their line is unsurpassed.

—Rudolph Brettner, 64 Nassau street, recently made an assignment, after having given a bill of sale of his establishment to S. Hirschberg, of 78 Nassau street. On the same day he was confronted by an order of arrest issued at the instance of D. L. Van Moppes, who charged him with fraud. Mr. Brettner was admitted to bail in the sum of \$2,000. It appears that Mr. Brettner secured a lot of diamonds from Mr. Van Moppes, which he afterwards stated he sold to certain firms and received a bill for them. Mr. Van Moppes claims he afterwards ascertained that the firms mentioned had not bought the goods, and, suspecting fraud on the part of Brettner, secured an order for his arrest. Brettner's liabilities and assets are as yet unknown.

—The appearance of the Metropolitan Burglar Alarm Company in the field of electric protection has played havoc with the inflated rates of the Holmes Electric Protective Company, who, in their desperation, are now reported to be offering their service to the subscribers of the Metropolitan with five years' lease at greatly reduced rates. Old subscribers of the Holmes Co. who for years have been paying and are still paying schedule rates, will check the transports of joy into which the announcement of this cheapening of electric protection might otherwise throw them, by a moment's reflection on that line of Virgil which is translated: "I fear the Greeks even when they bring gifts." The officers of the Metropolitan Company have fixed their rates at a figure that will yield a fair profit, and have no desire to pose as philanthropists.

—Fred. I. Marcy & Co., of Providence, are offering 25 cents on the dollar in notes without endorsers, but the committee of creditors after an investigation, submitted two plans to the creditors. One was to settle for 20 cents cash, payable April 1, 1889; and the other to make it optional for him to pay either 20 cents cash, or 33⅓ cents in endorsed notes to run six, twelve, eighteen, twenty-four and thirty months. It is probable that one of these two plans will be adopted. At the creditors' meeting many of the larger creditors signed an agreement to accept the latter plan. A committee of trustees, composed of William C. Greene, Alfred Krower, of Albert Lorsch & Co., and A. F. Chace, cashier of the Rhode Island National Bank, will continue in charge of Mr. Marcy's business until the last payment has been made. At the creditors' meetings much sympathy was expressed for Mr. Marcy, and it is likely that the optional plan suggested by the committee will be adopted.

—Harry R. Frazer, of East Saginaw, Mich., was robbed of a diamond brooch worth \$300, on Nov. 13th.

—The H. A. Prentice Company of Boston, Mass., an instalment concern, has been succeeded by Foster & Emerson.

—Charles G. Rochat & Co., 20 Maiden Lane, were recently elected members of the New York Jewelers' Board of Trade.

—The firm of Wade & Woodcock, Atlanta, Ga., has dissolved. Mr. W. W. Woodcock will continue the business in his own name.

—The Hampden Watch Co. have just put two new movements on the market, "No. 210" a six-size, gilded, and "No. 51," an 18-size open face, stem wind, seven jewels, gilded.

—J. S. Niswander, Gilroy, Cal., has send out his annual announcement for the holidays. It is, as usual, artistically printed, and his list of jewelry, silverware, etc., indicates that he has a large and well selected stock.

—E. L. Cuendet, the musical box importer, of 57 Maiden Lane, who started in business only last fall, has already found a good sale for his boxes which are of a special make. Dealers are invited to examine his stock.

—Giles' Anti-magnetic shield for watches appears to be in large demand. Some jewelers are even recommending its use on ordinary watches, believing that watches thus protected give superior results under all conditions.

—Roseman & Levy, of 41 Maiden Lane, who keep a complete stock of American watches, jewelry, etc., are prepared this fall to serve their customers with promptness. They send selection packages to reliable dealers.

—Brown & Grant, of East Saginaw, Mich., were swindled out of \$75 worth of jewelry, recently, by a man giving the name of T. C. Williams, who presented a forged order upon a well-known firm of lumbermen in that city.

—Howard & Möhle, assayers, refiners and sweep smelters, of 8 John st., constantly keep on hand a stock of gold and silver for jewelers' use, in all grades of fineness. They also pay the market price for gold, silver and platinum.

—J. R. Wood & Son, the old established ring manufacturers, of 14 John street, have taken the office lately vacated by M. L. Stites, and, cutting down the partition between that and their old office, have made a larger and pleasanter place for business.

—Attention is called to the advertisement of the Wm. Rogers Mfg. Co. in this issue. This Company uses several different trade marks to designate the different qualities of silver plated ware made by them, with which trade marks dealers who want reliable goods should become acquainted.

—Louis Staudenbaur, of 206 Grand st., Brooklyn, on Nov. 2d was the victim of a pair of swindlers, a man and woman, respectably dressed, who, in looking over his stock of earrings, dextrously stole one pair, the loss of which was not discovered by the proprietor until the couple had left.

—The largest gold brick ever made from a single Colorado mine was recently cast at the mint in Denver. Its value was \$39,219.91 in gold and \$362.54 in silver. Its weight before melting was 2,350.70 ozs., and after melting 2,330.79 ozs. The fineness is .814 in gold and .171 in silver. The size of the brick is 12¼ in long, 6 inches wide and 3⅝ inches thick.

—The jewelry store of Thomas Morrow, Elizabethport, N. J., was visited recently by a young man who said he wished to look at some fine gold watches. When Mr. Morrow placed a tray before him the young man seized the most valuable one in the lot, and before Mr. Morrow could recover from his surprise, rushed out of the door and escaped.

—Nicholas Muller's Sons have been turning out so many new patterns of bronzes, lamps, etc., lately, that their supplementary catalogue, recently issued, has been supplemented by another large sheet containing later designs, and new designs are still coming out. Dealers are invited to inspect these newest designs before completing their fall stocks,

—The Meriden Britannia Co. show an illustration of a handsome candelabra in their advertisement this month. In this class of work the Meriden Britannia Co. cannot be excelled for beauty of finish and artistic conception of design. Their line of holiday goods this fall is well worth inspection.

—P. Hartmann, 36 Maiden Lane, is one of the best known American manufacturers of gold and silver filigree jewelry. The patterns in which he shows this light and fanciful class of jewelry are this fall more pleasing than ever before, and are, withal, of substantial make. The air-tight inkstand which Mr. Hartmann patented a few years ago, is giving him a world-wide reputation.

—M. Horwich, of Chicago, has disappeared from that city, together with his stock of jewelry, barring a few articles of silverware, clocks, etc. He leaves behind a list of anxious creditors who are desirous of finding out his whereabouts. His fixtures and the little remaining stock are covered by chattel mortgages given to friends. Horwich formerly had a partner named Rosenberg, but when Rosenberg withdrew it was said he took no part of the firm's capital with him, having entered the firm without contributing any.

—The sheriff is in possession of the store of Joseph C. Gigon, of Philadelphia, against whom judgments aggregating \$12,227.08 were recorded on November 1st, in favor of several firms and individuals in Philadelphia, the largest creditor being A. Humbert. Mr. Humbert bought out the claims of the other judgment creditors and is now the only execution creditor in the case. Mr. Gigon's difficulties began last May, when he confessed judgment for \$1,262.38 to Hirst, Moore & White. He then signed a note and agreed to pay it in instalments of \$75 upon the 1st and 15th of each month. He defaulted the two October payments, and the holder of the note then levied upon his property, other creditors following his example.

—Among the later importations of the Chas. D. Pratt Co., 33 Chambers street, are a variety of beautiful leather portfolios, card-cases, imperial frames, pocketbooks and purses, embossed in colors; the "Picadilly folio" for the satchel; traveling bags, completely furnished, with slide underneath; La Maille-opera-glasses in pearl, enamel or leather—a new make every whit as good as older and more expensive glasses; triplicate mirrors with exquisitely ornamented cases; bronzes, onyx and marble clocks, and last but not least, a selection of dainty marbles, the handiwork of the Carrara masters, chief among them being a draped figure of "Night," by Traggiai Riccardo, a model of grace and repose. Their art room is a feast for the eye.

—Rogers & Brother, the well-known plated ware manufacturers, not only keep a line of goods that is unsurpassed, but they keep the appearance of their elegant store at 16 Cortlandt street worthy, in every respect, of the beautiful line of goods they there display. A remarkable feature of the wall show cases is that they are lighted within by a shaded incandescent electric light which is lighted and extinguished from without, in a very simple manner, whenever the goods in the case are to be shown. This is an improvement in showing goods which might well be imitated by retail jewelers throughout the country. In brief, Rogers & Brother's store is one of the sights of the city and dealers should not fail to call there, not only to see this modern improvement in show case lighting, but to examine some of the finest patterns of plated ware ever put on the market.

—R. G. Dun & Co. (The Mercantile Agency) are hard at work on the new semi-annual issue of their "Jewelers' Trade Book," which comes out on February 1. They are striving to make this still more complete than the July issue, which has received the endorsement of many prominent firms in the trade. To show the appreciation of their work the company has just sent out a little pamphlet which contains a large number of testimonials from prominent houses that have used the book, as well as a brief synopsis of the reasons upon which the publishers rest their claims of its superiority. The advantages claimed for it are these: It contains three times as many names, and 3,000 more towns, than any other jewelers' book, and a subscription includes the privileges of inquiry in an agency with facilities of information second to none. R. G. Dun & Co. have branch offices in nearly every city of any importance in the whole United States and Canada, and are rapidly enlarging the extent of the territory under their direct supervision. A critical examination of the new and improved book is invited.

—George L. Streeter, of New Haven, Conn., is suffering from typhoid pneumonia.

—Rufus C. Justis, of the firm of William S. Justis & Son, Baltimore, Md., is dead.

—Raphael & Newnan, manufacturing jewelers, of Chicago, failed on November 17, with liabilities of about \$15,000.

—A. J. Winters, Paris, Ky., has recently moved into a new store, elegantly fitted up, which he calls the "New Jewelry Palace."

—A jeweler at Warsaw, Poland, is making a golden bust of Bismarck, which is to be presented to the oldest German inhabitant of that city.

—Ruger & Kimball, of Buffalo, were sold out recently under several foreclosures of chattel mortgages and to satisfy a long list of judgments.

—It is reported that since the American Waltham Watch Co. substituted electric light for gas at their factory, the employees are less liable to catch cold.

—Mrs. M. E. Martin, of Greenville, Ky., has sold out the millinery and notions departments of her business, and will hereafter conduct a jewelry store exclusively.

—J. R. Harper, of Montreal, Quebec, has retired from business owing to ill health. He has sold out his business to R. Hemsley and will go to California to reside.

—A. B. Smalley, of St. John, N. B., lately a partner in the firm of Page, Smalley & Ferguson, and for some months mysteriously missing, has returned home and started in business alone as a manufacturing jeweler.

—Moore & Horton report a good fall business in their line of whitestone goods. In this branch they endeavor to keep in stock, at all times, a good assortment, hence they are enabled to fill special orders on short notice.

—Otto J. Deckert, an employee of A. B. Fritz, of 720 Samson street, Philadelphia, was arrested on November 22, charged with larceny by his employer and also by Diesinger & Joralemon, jewelers, whose office is in the same building as Mr. Fritz's.

—A despatch from San Antonio, Texas, says that E. Hertzberg has been robbed of a considerable amount of goods by a watchmaker whom he engaged last October. The watchmaker came into his employ from Pine Bluff, Ark., and was highly recommended. Detectives are in search of the thief.

—There are rumors current that the old factory of the Hampden Watch Co. at Springfield, Mass., is to be continued as a watch factory. The United States Watch Co. have hinted that they will leave Waltham if they cannot secure more land adjoining their premises, and Springfield people hope to induce them to occupy the Hampden factory.

—Messrs. Cattelle & Decker, diamond importers, of 20 Maiden lane, offer to the trade during December a fine line of mounted goods at exceptionally low figures, as they are desirous of reducing their stock before the holidays. An illustration of one of their most successful lines, representing a pearl and diamond brooch, will be found on page 100.

—A decision of the Treasury Department of interest to opticians was made recently. It declares that certain rock crystal lenses, with rough, unfinished edges, shall be admitted free of duty. This reverses a former decision, whereby a duty of 10 per cent. *ad valorem* was laid upon this class of goods as "undutiable crude materials advanced by grinding."

—The affairs of J. M. Chandler & Co., of Cleveland, Ohio, who failed recently, are in an unsettled condition. The Providence creditors refused to accept the 25 per cent. which was recently offered them, and sent a committee to confer with the New York Jewelers' Board of Trade and arrange a method of procedure to collect a larger percentage of their claims.

—Leon P. Jeanne, manufacturer of diamond mountings, has had much success this fall with rich, fancy pieces of various kinds, pendants, brooches, hair pins, combinations, etc., of which he is a veteran and artistic designer. His patent platinum settings are also in good demand.

—Siegfried Sittner, the young man recently convicted of pawning chronometers belonging to H. H. Heinrich and diamonds belonging to Stern & Stern and R. Brettner, and using the proceeds for his own benefit, was sentenced on November 9 to the Elmira Reformatory. The sentence was lenient, as this was Sittner's first offence. All the goods pawned by the young man have been recovered.

—William T. Spear, of Paterson, N. J., was arrested recently, charged with swindling various jewelry firms in Jersey City, Newark and other cities. His method was to secure employment with jewelry firms who were organizing watch clubs; and after a few weeks of honest work, he would secure a dozen watches for sale to his friends and then pawn them and abscond with the proceeds.

—Emanuel Sondheim, the young clerk of Stern & Stern who recently confessed to having been implicated with I. P. Miller in the theft of about \$5,000 worth of diamonds from his employers, was sentenced to the Elmira Reformatory on November 23. Sondheim's light sentence is due to his previous good character. He is but eighteen years of age. Stern & Stern have recovered the goods.

—M. Lewis, a salesman for a diamond house in the city, recently had his sample box stolen while talking with a friend in an up-town saloon. His employers have offered a reward of \$500 for the return of the sample box, which contained jewelry worth in the neighborhood of \$1,000. The name of the salesman's employers is not made public, as they have been advised by the police to avoid publicity.

—James Blattner, of St. Louis, Mo., a retired optician of some note, committed suicide recently at the age of seventy-six, probably owing to a mental affliction which troubled him some years ago. He retired from active business some fifteen years since, turning over his business to his son Henry and Frank Adams, his son-in-law. His death is generally regretted, as he was held in high esteem by a large circle of acquaintances.

—The wife of Mr. Gilbert T. Woglom died at her residence in Yonkers on November 21, after two years of severe suffering. Almost up to the time of her death Mrs. Woglom's recovery was hoped for, as she appeared more comfortable than for a few weeks previous. But on the afternoon of Wednesday a sudden change for the worse occurred, and she died that evening. The sympathy of the entire trade goes out to Mr. Woglom in his bereavement.

—The copartnership between the members of the old firm of Flint, Blood & Young, of Providence, was recently dissolved by the death of James A. Young; and William W. Flint and Joseph F. Blood now notify the trade that they will continue the business as before, under the firm name of Flint, Blood & Co. The main office and factory is located at 29 Point street, Providence, R. I., and the New York office will be continued at 196 Broadway, with Isaac S. Bowdish in charge. No stock will be kept at the New York office.

—The suit in the United States Circuit Court of Miller Bros. & Co., of No. 37 Union Square, against Dutée Wilcox and A. J. Smith, of Providence, R. I., for infringement of their design patent or rustic initial, in which the decision some years ago of Justice Clifford in favor of the patentees became celebrated throughout the trade, under appeal by the defendants (with the law's delay), came up last week before the United States Supreme Court at Washington, with the result that the appeal was dismissed with costs. Miller Bros. & Co. are to be congratulated on their signal triumph before the highest tribunal of the country. Every holder of a design patent in the trade will thank them for the earnest and determined fight they have made, for this decision now gives protection to all holders of such property, and will at the same time act as a wholesome lesson to prevent infringements in the future.

—E. W. Reynolds, of Greenwich, Conn., has sold out his business to Charles S. Perry & Co.

—A reliable authority estimates that between \$3,500 and \$4,000 has changed hands on election bets in the Elgin watch factory.

—Chas. F. Irons has just issued a catalogue of 200 pages, which he is sending to the jobbers, illustrating goods of his manufacture.

—Though the Elgin Watch Factory is being worked to all its fullest capacity it is yet unable to keep up with the demand for these celebrated watches.

—Lady Racine Chatelaine watches are having a good sale at present. They are made in several sizes in nickel, and in 13 lines only in silver and gold.

—Sussfeld, Lorsch & Co. are receiving their fall invoices of opera glasses, optical goods, etc., in large quantities, and dealers are invited to give them a call. They also keep a large line of watch materials, tools, etc.

—The new series of the Waterbury Watch is becoming popular very fast, owing to the valuable improvements over the old series. Series "J" has the short wind and the stem set, and though a little more costly than the other series is meeting with large sale.

—C. Rosswog & Son show this fall a more varied and complete line of rich diamond jewelry than ever before, including pins, brooches, rings, bracelets, etc. Of bracelets they are making a large variety, but are having particular success with a line of fancy bangles set with rubies, diamonds and sapphires.

—J. T. Scott & Co. show on another page of this issue a few patterns of their mounted diamond goods, of which they carry a full assortment in stock. They have lately been giving special attention to this branch of their business, and dealers are invited to give them a trial when in need of anything in this line.

—James S. Kelly, 119 Broadway, Brooklyn, was last month the victim of a well dressed thief, who, in the role of a customer, succeeded in taking \$200 worth of diamond studs while the clerk's attention was distracted. The thief is a man of light complexion, with sandy moustache, and about 40 years of age.

—The New York Standard Watch Company show in their advertisement this month illustrations of the Standard movement and of an enlarged escapement which clearly show the peculiarities of this watch. Attention is called to these illustrations. Their shipments are rapidly increasing, exceeding 1,200 watches one day last month.

—The co-partnership heretofore existing between Ira W. Shattuck and Frederick W. Shattuck, of 315 Market st., Wilmington, Del., was dissolved on October 29th. The business will be continued by Ira W. Shattuck, under the firm name of Ira W. Shattuck & Co., who will assume all debts, liabilities and obligations of, and all accounts due the late firm.

—Jacot & Son, musical box importers, report a trade thus far this season which exceeds that of last year, notwithstanding the political excitement. They are receiving fresh importations every week, and their stock is now more complete than ever. In their new style interchangeable concerta boxes they are unable to meet the demand, so popular have these become.

—The old established firm of J. W. Greene & Smith, was reorganized on Nov. 1st, in consequence of the death of the late J. W. Greene, the veteran jeweler. The members of the new firm are Warren G. Smith, the junior partner in the old firm, and W. S. Wickham, who has been with the old firm twenty years as clerk. The new style is Warren G. Smith & Co.

—On Nov. 1st, Charles F. Collins completed the 25th year of his service in the factory of Chas. F. Irons, for whom he has been foreman for the last 10 years. That evening, Mr. Irons invited the men with their wives to his residence, where a social evening was enjoyed to commemorate the event, the host presenting Mr. and Mrs. Collins with a silver tea service of 6 pieces, marked 1863, C, 1888.

—Henry E. Oppenheimer & Co., who have one of the best equipped diamond mounting shops in the business, are at present working to their fullest capacity. They have introduced a very taking line of patterns in lace pins, brooches, scarf pins, bracelets, etc., in which they report an especially good trade. In mounted goods they show a very large and well-selected line.

—D. J. Dyer, 471 Fulton st., Brooklyn, was robbed recently of four diamond rings worth \$575, by a man apparently 35 years of age, about 5 feet, 8 inches in height, well dressed, and having a fair knowledge of the worth of diamonds. The man looked over Mr. Dyer's stock of rings, and while Mr. Dyer was reaching for another tray, rushed out of the store with four rings. Mr. Dyer gave pursuit armed with a revolver which he discharged at the fleeing thief several times, but the man escaped unharmed.

—Three hundred and fifty women in the employ of the Keystone Watch Case Co., of Philadelphia, recently presented a gold watch to Mrs. Grover Cleveland, as a testimonial of their esteem, and expression of their gratitude for Mrs. Cleveland's influence in behalf of the working women of America. The watch was presented to Mrs. Cleveland at Oak View, on October 30th, by Mrs. Chas. N. Thorpe, wife of the president of the Keystone Watch Case Company, who made a fitting address on that occasion.

—Mr. James Graves, formerly a member of the firm of M. Fox & Co., died on Nov. 20th, of acute bronchitis, at his home in this city. Mr. Graves was born in Philadelphia in 1836, and, when 22 years old, came to New York and learned the trade of lapidary. Later he went into business with Mr. Harry Graham, under the style of Graves & Graham. This continued until 1875, when he was admitted into the firm of M. Fox & Co., from which he retired four years ago on account of ill health. Mr. Graves was married in 1859 to Miss Wilhelmima Schmidt, a sister of Mr. Charles Schmidt, formerly a member of the firm of M. Fox & Co., who was lost at sea on the *Schiller*. Mr. Graves' wife and a son survive him.

—A case of unusual interest to our manufacturing jewelers was decided by Judge Steckler on the 12th inst. Henry E. Oppenheimer & Co. employed one Schauman at the rate of \$4 a week, and agreed that if he remained in their employ for two years and performed his duties faithfully, they would pay him at the end of that time an additional dollar for each week. Schauman worked for about eight months and then left, alleging illness. On the trial it was claimed that the boy, being a minor, could repudiate his contract and was entitled to the whole sum. The Judge, however, after taking the case under advisement, decided that the agreement was valid, and accordingly rendered judgment for Henry E. Oppenheimer & Co. This determines a question which has been in much doubt, and sets at rest the vexations caused by irresponsible employees attempting to repudiate their agreements.

—S. F. Myers & Co. announce the completion of their new illustrated catalogue for 1889, which is nearly one hundred pages larger than any previous edition. It is an elaborate and handsome volume of 330 quarto pages, with rich leather and gold embossed binding, and represents a very large cash expenditure, as well as an immense amount of labor and care. Its weight is five pounds, over five thousand new box-wood engravings embellish its pages, and in it are quoted more than sixty thousand separate prices, embracing a variety of goods, represented by the twenty-three voluminous departments into which S. F. Myers & Co. have divided their large establishment. The prices in the new catalogue give protection to the trade, as the figures are all "long" or "list," and no clues to discounts are exposed, an invariable rule of the firm being to convey this most important information in separate sealed envelopes to all who receive the book. In every respect—in paper, presswork, engraving and binding, it is a fine specimen of book-making, and is likely to be carefully studied and preserved by all who secure a copy. It is sent free to customers of the firm, and to dealers whose application is accompanied by a satisfactory business card.



VOLUME XIX.

NEW YORK, JANUARY, 1889.

NO. 12.

SETH W. HALE.

MR. SETH W. HALE, President of THE JEWELLERS' CIRCULAR Publishing Company, died at his residence, No. 124 West 86th street, this city, on the evening of December 11, at the age of 67 years. He had been ailing for a number of weeks, and it was evident for some time to those associated with him that the end was not far off. On Friday of the previous week he was at the office of THE CIRCULAR, but was obliged to leave early in the afternoon, being exceedingly feeble. It was with great difficulty that he reached his home, as he refused assistance that was tendered him, while apparently growing feebler all the time. On arriving home he at once went to bed, from which he never arose. He was suffering from Bright's disease, which not only destroyed his physical vigor, but impaired his mental activity, so that during his last few days he remained in a semi-conscious condition, recognizing scarcely any one but his wife and daughter. He finally passed quietly away with scarcely a struggle and evidently without suffering. His funeral took place on Thursday the 13th, services being held at the house, and the interment taking place later at Skaneateles, New York. The services were largely attended, there being many representatives of the jewelry trade present, and members of THE CIRCULAR staff.

Mr. Hale was born Nov. 18, 1821, at Burlington, Connecticut, a small place near Hartford. His earlier years were spent upon his father's farm, but as the lad did not relish the idea of becoming a farmer, he persuaded his father to permit him to enter upon a business career. He did not express a decided preference for any particular line, but on his father's recommendation he went to work in the then small establishment of the Jerome Clock Company. He proved to be a boy of steady and industrious habits, and as he became acquainted with the business, his responsibilities were increased and his services duly recognized by the company. Mr. Hale was finally sent on the road to sell clocks and clock material, his trips enabling him to make a large number of valuable acquaintances in western and central New York, with which section he became especially familiar. Indeed, so well known was he in New York State that the impression obtained that he was born in the central part of the State, which is a mistake. The Jerome Clock Company finally opened an office in New York, and Mr. Hale was placed

in charge of it, still doing considerable traveling, however. His brother, C. E. Hale, came to New York about this time, and the two formed a partnership for the transaction of a general jewelry business.

This connection did not last long, however, and on the dissolution of the partnership, Seth W. entered the service of Fellows, Wadsworth & Co., for whom he traveled extensively. It was during one of his Southern trips that he met Mr. Aaron Carter, of the old firm of Carter & Pierson. Mr. Carter was taken dangerously sick while in the South, and Mr. Hale devoted himself to taking care of him till he recovered. This led to the formation of a friendship between Mr. Carter and Mr. Hale, which nothing but the death of the latter has been able to interrupt. Somewhat later Mr. Hale became associated with Mr. Carter in business, the firm becoming Carter, Pierson & Hale, and still later, Carter, Hale & Co., now known as Carter, Sloan & Co.

In 1867 Mr. Hale, having acquired a competence, retired from the firm, and visited Europe with his family, where he spent many months in traveling. On his return from abroad, he made the mistake of engaging in the stock brokerage business in Wall street. He formed a partnership with a relative, the firm being Hale & Burr, and devoted himself to the brokerage business. It was an unfortunate departure for him from his legitimate business, as he lost a large amount of money by it. This firm was dissolved after a time, and Mr. Hale returned to the jewelry business, becoming a partner in 1873, in the firm of Mulford & Co., the name being changed to that of Mulford, Hale & Cottle. Mr. Cottle retired from the firm in 1876, but it was continued under the title of Hale & Mulford. They occupied offices in the Waltham building in Bond street, which was burned, the firm being among the losers. Their business was then removed to the building at the corner of Broadway and Fourth street. After the firm had been in existence six years, Mr. Mulford withdrew, but Mr. Hale continued the business under the firm name of S. W. Hale & Co. This continued for two years, but during a period of excessive dulness in the jewelry trade, the firm suspended and its affairs were wound up. In this emergency Mr. Hale showed the sterling qualities of his nature and the correctness of his business training by turning over to his creditors all his property and leaving himself

stripped of everything. It was a terrible thing for a man, after more than fifty years spent in active business, to be compelled to begin life over again, and to compete with the younger and more active men of the day. But Mr. Hale was not one to give up, and at the first opportunity was again in business harness, but he never recovered his youthful energy and vigor.

About this time Mr. Hopkinson, the founder and sole proprietor of THE JEWELERS' CIRCULAR, died. His widow desired to dispose of an interest in the property, and Mr. Hale organized among his friends THE JEWELERS' CIRCULAR Publishing Company that purchased of Mrs. Hopkinson a controlling interest in THE CIRCULAR. Mr. Hale was chosen president of the company and its general manager, which position he held at the time of his death.

In this brief and imperfect manner we have outlined the chief events in the active business life, extending over more than half a century, of an able, intelligent, energetic man, whose activity had made him well known to the trade in most sections of the country. He was possessed of a large physical frame, a tall commanding figure, and in the prime of life, was a very handsome man. But age and business cares had brought a droop to his shoulders, and the elasticity of youth had departed from him when the writer was brought into close personal relations with him a few years since. The genial, pleasant manner was still there, the kindly word for all, the sympathetic heart, that prompted the lips to utter words of encouragement and friendship for all with whom he was associated. In the trade, his reputation for sterling integrity and high moral character has never been questioned. Since his death, one who knew him intimately, in his days of prosperity and the years of trouble which followed, said of him: "He was one of the kindest, gentlest natures I ever knew; a man of the strictest integrity, with a keen sense of business honor, who never wilfully wronged another or intentionally wounded his feelings." Every one who speaks of him has only terms of respect and esteem to bestow upon him, while those who have been most intimately associated with him during the past few years, bear willing testimony to his many admirable personal characteristics, to his kindly nature, and to the uniform courtesy expressed by him in their intercourse with him.

Thus THE JEWELERS' CIRCULAR is, for the second time, called upon to mourn the loss of its executive head and business director. Its founder and sole proprietor, D. H. Hopkinson, died less than four years ago, and is now followed by his immediate successor, Mr. Seth W. Hale. While the men were totally unlike each other, each possessed characteristics that tended to make THE CIRCULAR the leading trade journal and to hold the confidence of the members of the trade. While Mr. Hopkinson was a trained journalist, well calculated to successfully establish such an enterprise, Mr. Hale was possessed of better business qualifications, more methodical habits, and fully competent to conserve the interests which his predecessor

had founded. That he successfully piloted THE CIRCULAR during more than three busy years, losing nothing of the confidence which the trade had reposed in it, maintaining and increasing its business, with never a harsh word for detractors, was a tribute to his business sagacity as marked as any that occurred in his long and active career.

At a special meeting of the Trustees of THE JEWELERS' CIRCULAR Publication Company the following was adopted, ordered spread upon the minutes of the corporation, and a copy to be sent to the surviving members of his family:

OFFICE OF THE JEWELERS' CIRCULAR PUBLISHING CO
189 Broadway,
NEW YORK, December 13, 1888.

The stockholders and trustees of THE JEWELERS' CIRCULAR COMPANY have learned with profound sorrow of the death of their highly esteemed associate and fellow-worker, Seth W. Hale, President and General Manager of the company.

During the many years we have known him, while at the head of THE CIRCULAR, and in other business enterprises, we have ever found him to be a thoroughly conscientious business man, whose integrity has always been above suspicion.

Engaged for nearly half a century in active business as a manufacturer of jewelry, Mr. Hale enjoyed the confidence of his fellow citizens and of the trade in a marked degree. He was a leader in good works, and the welfare of the business with which he was identified was a thing near to his heart. He was one of the organizers of the Jewelers' Association. That organization, influential and powerful, has been since its formation conducted substantially on many lines originally traced by Mr. Hale.

He was at different times identified with various firms in the jewelry business, and his name was always one to awaken confidence.

After having accumulated a large fortune, reverses suddenly overtook him, but his proud and sensitive nature shrank from taking advantage of the circumstances, and it is well known that he sacrificed everything he had accumulated to preserve his good name and personal integrity.

During the later years of his life we have been associated intimately with him in the management of THE JEWELERS' CIRCULAR, and bear willing testimony to his gentleness and forbearance, to his uniform courtesy and kindness of heart. Faithful to every trust reposed in him, he was a man to love and to honor, and one whose business morals and sterling integrity rendered his position in life one to be envied.

His career may well serve as an example for younger men to imitate, and well illustrates the worth and ability of business men who are governed by an *honest conscience*.

In the death of Mr. Hale we have lost an honored friend and a trusted associate, and enter upon our minutes this slight tribute to his worth, and tender to his bereaved family our deep sympathy in this their great affliction.

GEORGE C. WHITE, JR.,
Vice-President.

A. K. SLOAN,
Secretary.

Mr. Hale left two daughters, one of whom is married and lives at Morristown, N. J., the other being at home with her mother.

THE JEWELERS' CIRCULAR

AND

HOROLOGICAL REVIEW.

OFFICIAL REPRESENTATIVE OF THE JEWELERS' LEAGUE, THE NEW YORK JEWELERS' BOARD OF TRADE, AND THE JEWELERS' SECURITY ALLIANCE.

It is also the Recognized Exponent of Trade Interests.

A MONTHLY JOURNAL DEVOTED TO THE INTERESTS OF WATCHMAKERS, JEWELERS, SILVERSMITHS, ELECTRO-PLATE MANUFACTURERS, AND THOSE ENGAGED IN THE KINDRED BRANCHES OF ART INDUSTRY.

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All communications should be addressed to

THE JEWELERS' CIRCULAR PUBLISHING CO.,
189 BROADWAY, NEW YORK.

Advertising rates made known on application.



A full Index to Advertisements and Table of Contents will be found on Page 5 of this issue.

THE holiday season is ended. The jeweler has been busy gathering his harvest and is now occupied in comparing the fruitage of his labors with that of former years. On account of the distractions of election the bulk of the fall business was crowded into the month of December even more than usual. But, discounting for this quadrennial damper, the result, we believe, has on the whole been satisfactory. Now that the rush is over, however, and normal conditions are restored, the jeweler's thoughts should be directed to the task of keeping his trade at high water mark the whole year through. The season of gifts is bound to be the gala month of the year, but this should not predispose the storekeeper to rise to a spasmodic energy for the short period of Christmas festivities and then lapse into a comatose state for the balance of the twelvemonth. Let every jeweler begin the new year with a resolution to strive to keep himself up to the standard of holiday requirements by new attractions in stock, original methods of advertising and a keener interest in the social life of his town or neighborhood. Though he can scarcely expect to have holiday trade the whole year round, it is quite within bounds for him to prevent his store from becoming a mere repair shop with the advent of the new year, as is too often the case. People are prone to admire jewelry and give presents all the year through. Then seek to encourage these natural predilections. Join with us in disseminating fashion notes through the medium of your local papers, give more attention to window dressing and the general appearance of your store. Make your repair bench subordinate to your counter. In short, don't be content with doing business only two months in the year.

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ONE of the indirect benefits of trusts is to be found in the impetus that has been given to copper prospecting all over the world. This mineral is now attracting some attention in South Australia, and lodes are being opened all over the colony. One of the most remarkable deposits seems to be that at Mount Gunson, 70 miles

northwest from Port Augusta, where a rich green silicate of copper, assaying 55 per cent. and carrying also 18 ounces of silver per ton, has been found in such quantities that it is said to be quarried out from the side of a hill which seems to be full of it. Trusts are scarcely blessings in disguise, but the law of compensation holds even here. We shall have many new copper localities before we get through with the Copper Trust.

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AN EXCHANGE says that astute diamond thieves at Kimberley have been reviving an old trick and nearly succeeded. They went out as representatives of a firm dealing in improved safes, and took some of the latter with them as samples, providing themselves with all the necessary duplicate keys, etc. They sold one of the safes to a large company, which on several occasions had it nearly full of gems. The thieves, no doubt, watched carefully, but they missed the main chance. They managed to get access to the safe, and walked off with the contents, which happened to be worth only about £300. They have, of course, sought a new field of operations. Some years ago a similar trick was played, and a well-known diamond company was nearly ruined, as it had been keeping back its gems for a rise in the market. Up to the present nothing has been heard of the manipulators, who hurriedly left the scene of their operations.

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A CONTEMPORARY that is rather prosaic generally has the following daring flight of personification in its last number: "Among the curiosities at the Glasgow exhibition are a watch made by Hugh Wilkie and three horseshoe nails." Mr. Wilkie will be surprised to learn that he must share the credit for his work with three co-laborers of such seeming insignificance as horseshoe nails. Perhaps the editor imagined that this was a Scotticism for apprentices.

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THE wonderful development of electric invention during the past decade, and its utilization even in the common business of life, has introduced a new element of uncertainty into the problem of watchmaking, necessitating the adoption of some precautions against its influence. While there is a disposition in some quarters to overestimate the importance of this force, in others there is just as plain a disposition to minimize it. Magnetism, it is true, is a convenient excuse for botchwork, and perhaps as often is the ridicule of that large class who are disposed to condemn without examination whatever savors of innovation or is hostile to their own interests. But for all this, the problem of perfecting a non-magnetic watch is a real one and cannot be laughed out of existence. That electricity is a present and growing factor in modern life is unquestioned. That its effect on watches in proximity is injurious is also proved beyond a doubt. These are indisputable facts. Furthermore, non-magnetic metals are already known, and others will probably be discovered. Some of these ought surely to be available for the more delicate watch parts that most require protection. Under such circumstances the courtesy of a thorough test should certainly be granted to those who claim to have solved this vexed problem. To ridicule the idea of magnetic influence is to ignore physical facts.

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THE bookkeeper is becoming a very important man in the jewelry trade. To the bankrupt his dizzy arithmetic is a very present help in time of trouble. Under his searching scrutiny assets

melt away like snow before the south wind. As to his salary, after assignments, if we can judge by the shrinkage of assets, it must be equal to that of the President of the United States—(expert figuring is expensive, especially the kind that can transform a \$33,000 surplus into a \$33,000 deficit in the short space of a month). How otherwise is it reasonable to explain the position of a merchant who, when overtaken by financial embarrassment, is at first profuse in his promises to pay 100 cents on the dollar, but after studying "partial payments" with his bookkeeper and lawyer for a month or so, comes up smiling with an offer of 25 cents on the dollar. In the interim even so substantial an asset as real estate vanishes from the schedule altogether; accounts collectable are diminished by one-half, and items change mysteriously from the credit to the debit side of the account. Sixty-six thousand dollars! Quite a lapse of memory and not on the witness stand either! The most charitable view that can be taken of this must acknowledge inexcusable ignorance. If such extraordinary results are to be obtained by bookkeeping in the jewelry trade, let the commercial agencies base their credits on the honesty and accuracy of bookkeepers and not on the figments of dummy proprietors who buy, sell, promise and fail in blissful ignorance of their own business. Experience shows that there are merchants in the trade whose sworn statements of their own financial status are worth just about as much as the castle-building of the redoubtable Colonel Sellers.

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THE movement started among the Parisian jewelers some time ago to bring about a revival of jewelry by subsidizing the modistes and the fashion papers, has already encountered great difficulties. The attempt to force jewelry upon the public by any such open concerted action is almost sure to defeat itself, because the agencies employed are bound to get an exaggerated idea of the value of their services, and because the fickle goddess, Fashion, is too obstinate and self-willed to yield readily to dictation. Subtler and more insinuating arts must be tried. The innate sense of beauty must be persistently appealed to, if the public are to forget the unwilling vows they have made at Fashion's court. Far preferable is the indirect method adopted by the jewelry journals in this country, which has already proved so successful. But we doubt whether this could succeed in France, so strong is the bondage of custom there, so unconquerable the jealousy among the newspapers and the different trade guilds. Thanks to the broader and more enterprising spirit of our newspapers, we do not have to think of subsidizing them. They are our willing assistants in enlightening the popular mind and clearing away its delusions. In spite of the apparent failure of the movement in Paris on account of the unfavorable conditions that prevail there, the mere agitation of the subject will doubtless result in ultimate good by calling attention to a senseless prejudice. As to the trade on this side of the Atlantic, all they need do is to help on the good work of the diffusion of fashion notes by every means in their power, and preserve and improve the artistic excellence of their styles.

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ANOTHER corner in tin looms up in the future. A syndicate of English capitalists, who own mining lands at Harney Peak, in the Black Hills of Dakota, have been prospecting on their property, and find large deposits of almost chemically pure tin averaging 74.31 percent. of white metal. With so hopeful an outlook the owners of the mines will no doubt push the work of developing their property as rapidly as possible, and English tin will have a rival in our market. But if the present skyward tendency of tin plate tariff legislation is any indication it will not be a very dangerous rival, for it will still be "English" tin though mined in Dakota. The American people are strangely liberal to foreign capitalists. They take delight in sending copper over to Europe and then having it shipped back to them again so

that those poor foreign capitalists can make a little something on it, and, no doubt, they will do all they can to encourage this new home industry by sending tin on the same roundabout journey. The discovery will prove a bonanza for the owners, but it is not so clear how the manufacturers who work tin, and the people of the United States who consume tin, are going to be benefitted by it, except, perhaps, by the sentimental satisfaction of using tin that was mined on the North American continent.

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THE crusade which is now being organized against dishonest pawnbrokers ought to receive the hearty support of every jeweler and every honest pawnbroker. It is one of the crying evils of the hour. Legislation has long been shamefully prostituted for private and unworthy ends. In this and in many other cases the law has actually become the shield of thieves and criminals. Justice is a by-word. Well may we vent our indignation against the disreputable Fagans who, in the security that such infamous laws give to them, lure the weak into temptation by furnishing a ready means of disposing of valuable plunder. But this is not enough. Something more is needed from our sober citizens than an occasional rheumatic twinge of indignation, followed by a relapse into the same old indifference. Our method of elections that makes such a state of things possible must be changed in toto. Destroy the political machines that have built up a trade in politics and find their chief strength in an alliance with all the lowest and most dangerous elements of society. Ballot reform is the only radical remedy. To look for relief in the mere repeal of this law, or any other of the many laws of like nature that might be mentioned, is useless. It would simply be cutting off one of the heads of this monster hydra to see another instantly spring forth in its place. The beast must be pierced in a more vital part. Just so long as political organizations control nominations, the printing of ballots and the whole machinery of politics, just so long will they be able to set the honest, law-abiding portion of the community at defiance, and among the coveted rewards for political service will be protection from just laws that are allowed to fall into desuetude, or the framing of new enactments to secure immunity for new villainies. Let the honorable and patriotic jewelers, regardless of political preferences, unite, not for the abolition of particular laws that touch them directly, but to displace the self-seekers that have framed and will continue to frame such laws. So alter our election laws that clean men can be brought forth for the suffrages of their fellow citizens, and they will make short work of the bad laws that bad men have saddled upon us.

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WE SOMETIMES hear retailers say they have no time to read the trade journals. So fully occupied are they with the routine duties of business and numerous outside distractions that they cannot find a moment to devote to these periodicals, much as they would like to. But these same men read their daily papers and would consider themselves recreant to a plain duty if they failed to keep posted on the general happenings of the day. Is not trade news of more direct concern to the jeweler than a knowledge of the latest social and political scandals, in the discovery and elaboration of which the modern news monger seems to find greatest pleasure and profit? Not that the daily newspaper is an unmingled evil. Far from it. There is much in the average daily that it is absolutely necessary for the well-informed man to know, but with it is mingled much that is useless or positively harmful. The problem for the reader is one of selection; to take the good and eschew the bad. A sympathy with the broader questions that agitate the human mind and a general knowledge of progress in the arts, sciences and politics is to be expected of every business man in this latter half of the 19th century, but this does not preclude him from utilizing every possible source of information in his own particular sphere of effort. It

rather aids him in his special field. The noble dictum of the Latin poet: "I think nothing human alien to me," should be understood by the jeweler in a twofold sense; in its broader application to the common interests of humanity and in a narrower sense which he might parody in this way "I think nothing that concerns the jewelry trade alien to me." The man who in this restless, teeming world of to-day, folding the cloak of his pride about him, shuts out the world and thinks himself sufficient unto himself, may feel the satisfaction that generally accompanies an exaggerated idea of one's own importance, but he will be left alone in his glory while the great world moves on. To keep posted on the latest devices and methods of competitors; to secure protection against the thieves and confidence men that batten on the trade; to avail one's self of all improvements and economies that may be discovered; to feel the pulse of the great centers of trade even at the remotest arteries; in short to keep constantly *en rapport* with the world's work and thought in one's special line of business is no longer a privilege; it is a necessity for the progressive merchant.

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JOHN WARD STIMSON has opened his long-looked-for Institute for Artist-Artisans at 140 West 23d street, New York. Large classes in modelling, designing and decorating have been organized and are now well advanced in their work. Others will be added as soon as sufficient interest is aroused among the different trades of the city. It is Mr. Stimson's wish to allow each trade to supervise its own special department, appointing representatives to visit the school and make suggestions bearing on the practical value of the instruction. The trades of New York owe to Mr. Stimson, for the unselfish devotion he has shown to this great cause, a heartier support than they have thus far given him. The difficulties he has encountered would have discouraged a man of less earnestness of purpose, and if this movement for higher technical education shall fail of the full measure of success it deserves, the responsibility must rest upon the intelligent manufacturers and tradesmen of New York, to whom argument and appeal have repeatedly been made with such meagre results. Cannot the jewelers and silverware manufacturers lend a helping hand to Mr. Stimson so that classes in jewelry designing may be organized without delay?

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BOSTON instalment dealers have suffered greatly of late from the depredations of dishonest agents who take advantage of the confidence reposed in them to forge leases and appropriate goods entrusted to their charge. One of the oldest and apparently most successful of these houses has recently given up business, and not alone from Boston, but from all parts of the country comes the same story of fraud and betrayal of trust. In the face of these facts, therefore, complaints about the exorbitant profits of the instalment dealer are hardly justified. If his profits are large, so are his losses. Many fail in it where one succeeds. Abuses of credit are numerous enough in the legitimate trade, with a narrower field, a more trustworthy class of custom and greater facilities for inquiry. The instalment dealer's liability to losses from this source is trebled. What with rascally agents and migratory customers his lot is not a peculiarly happy one. Jewelers who have already engaged in this business or are contemplating it, should understand its risks and disadvantages. The instalment plan certainly has good reason to be, as it supplies a real need, but it is always more profitable for the dealer in luxuries to cater for cash custom.

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IT IS reported from London that the question of the leasing of the Burmese Ruby Mines has at last been settled, Messrs. Rothschild and Messrs. Streeter, the Bond street jewelers, to whom the government concessions for working the mines were originally

granted, having united their interests, and sold the lease of the mines to a syndicate which is to work them, for a profit of £300,000 over and above what they are to pay the government. What the latter amount is has not yet been learned, but it is believed to be a considerably larger sum than the four lakhs originally offered by Messrs. Streeter. With the application of modern machinery surprises may be in store for us. At present it is impossible to tell what the future may bring forth in these old ruby mines of Burmah, but if the figures given above are trustworthy, it looks as though somebody puts a rather high estimate on their value.

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ON DECEMBER 1st, a meeting of the Board of Directors of the Commercial Travelers' Protective Association was held in Chicago to consider, among other things, the amendment of the Interstate Commerce Law so as to secure to recognized commercial travelers special fares on all railroads in the United States. The Association, it is reported, is about to bring powerful influence to bear through its numerous local branches, upon the Fifty-first Congress to secure such favorable legislation, and as the organization controls many votes, concessions may reasonably be expected. But let us briefly examine the grounds on which this is sought and see whether the travelers are working in the right way or for proper ends. In justification of the contemplated action President Pickering is reported to have said:

"The twenty-second section of the law provides that nothing in this act shall be construed so as to prohibit railroad companies carrying ministers of religion at a reduced rate of transportation, and we therefore naturally expect Congress to grant similarly favorable legislation to the drummers, who are the commercial evangelists of the Nation."

That ministers and theatrical people are allowed to travel cheaper than their fellow citizens is one of the anomalies which a nation boasting as one of the corner stones of its liberties the separation of church and state, might find it hard to explain to the satisfaction of the unprejudiced mind. Railroads are common carriers. Discriminations of this kind are in violation of their charters which proceed from the state and hence cannot give powers inimical to the general principles of our government. President Pickering's argument, therefore, seems to reduce itself to the plea that one legal blunder justifies another. If the religious evangelists are to be the recipients of special favors at the hands of the government or its agents, so may the "commercial evangelists of the nation." No more vicious principle of legislation could possibly creep into the laws of a free people. It is the parent of all sorts of tyrannies. Once abandon the high ground of strict and unconditional equality before the law, and the breach is opened for a horde of abuses to crowd in and destroy the last vestige of our freedom. That breach has already been opened. The grounds taken in this plea prove it. To the precedent invoked by the association we must emphatically take exception and insist that the whole line of reasoning that supports it is false and un consequential. The travelers take too narrow ground. There is a sound basis in reason for the graded rates or 1,000 mile tickets they are seeking to secure. Commercial travelers as compared with most of the traveling public are "wholesale" travelers, and as such are entitled to cheaper fares, just as a man who buys a large quantity of goods expects to and does get them cheaper than a man who purchases at retail. This right to buy railroad fares at wholesale, however, cannot justly be monopolized by an individual or an association. All must be put on an equal footing. It is a question of expenditure, not of vocation, and any citizen, whatever his profession or the motive of his travels, should be accorded the privilege of purchasing these tickets. Discrimination even in private business is impolitic and unfair; in governmental affairs it is tyranny. For, consider, Have we no other "evangelists"? And does not experience prove how easy it is for men to become "evangelists" or anything else for the nonce if there is profit in it? The traveling public includes many classes. Theatrical troupes, for example, are perhaps as numerous as commercial travelers and are they less evangelical? It is needless to illustrate the argu-

ment further. The government "of the people" is not a Sabbath school superintendent distributing awards for good behavior. It is no part of its business to grant favors to certain orders or sects of superior sanctity or usefulness. There is, as we have seen, a sound business principle underlying the proposed legislation, but any attempt to limit its benefits to the Commercial Travelers' Association is unjust and unconstitutional. If the movement can be carried out in a liberal spirit, that organization may do a distinguished public service, redounding not only its own but also to the advantage of every citizen. But if it imitates the selfish, grasping policy of the lobbyist, it will but add its name to the army of greedy partisans that already besiege our legislative halls, clamoring for governmental boons and patronage.

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MANUFACTURERS who complain of the readiness with which their designs are copied by less original competitors may find some consolation in the remark a prominent silversmith once made when one of his newest and most popular patterns appeared in a competitor's show case: "as long as they follow we're ahead."

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THE *Keystone* came out last month in holiday blue. The cloud-enwrapped aerial projectile in the shape of a keystone that appropriately ornaments the front cover stood out in bolder relief than usual, and the reading matter was more general and varied in character.

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WE ACKNOWLEDGE the receipt, through the courtesy of David T. Day, of the United States Geological Survey, of the "Mineral Resources of the United States" for 1887. Of chief interest to the jewelry trade is the chapter on precious stones by Mr. George F. Kunz, a large portion of which is reprinted in this number.

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FROM the Summary of Imports and Exports for October we quote the following figures: Of rough and glaziers' diamonds, \$19,983 worth were imported as compared with \$16,025 last year; of clocks, \$65,458, against \$68,295 last year; of watches, \$171,430, against \$187,612 last year; of jewelry, \$99,733, against \$107,568 last year; of precious stones \$720,574, as compared with \$1,083,952. Importations of bronzes increased about 12 per cent. The showing of exports is not so favorable: \$98,378 worth of clocks (\$132,336 in 1887), \$7,368 worth of watches (\$24,387 in 1887), \$39,912 worth of jewelry (\$47,862 in 1887), \$53,570 worth of plated ware (\$64,719 in 1887).

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IN THE December number of a western journal "A Retailer" discusses the old but ever new subject of dry goods and haberdashery competition. He argues in a forcible and earnest manner, and is evidently aware that something ought to be done, but his remedies, in our opinion, are entirely inadequate to the case. A large portion of the letter treats of the present custom of warranting goods, which he considers the chief reason why the retail jeweler is handicapped in the race with the general merchant, and which he would abolish altogether. This view of the difficulty, it seems to us, is a total misapprehension, and flies in the face of every-day experience. Who requires the jeweler to guarantee his goods, and why does he guarantee them? Is it not the customer who expects or demands a guarantee of quality, and deals with the jeweler in preference to the general merchant for this very reason? And, further-

more, does not the jeweler know this? To warrant unreliable goods is indeed the height of folly, and must soon ruin the reputation of anyone who has the temerity to do it, but this does not prove the uselessness of the guarantee. It only emphasizes the importance of *reliability*. So far from being an evidence of weakness to warrant the articles he sells, we submit that it is the one advantage the retail jeweler, as such, has over his more desultory competitor. Illustrations are plentiful in all lines of business. There is scarcely a house of any age and magnitude that does not owe its success in large measure to a rigid adherence to the principle of selling goods for just what they are and guaranteeing them to be as represented. The great house of Tiffany & Co. to-day is neither too old nor too proud to warrant its wares, and this policy, it is well known, has been the chief corner-stone of its wonderful prosperity. It will be evident on a moment's thought that "Retailer's" proposition to abolish the custom of guaranteeing goods is as chimerical as any that could well be devised. It is not possible, and even if it were it would be very unwise to take from the jeweler one of the most powerful weapons he can use in meeting the competition of the numerous encroaching trades. Continue to guarantee your goods, then, but remember that your guarantee is your reputation, and is not to be trifled with.

Apropos of the increasing promiscuity of trades the writer says:

It is not enough to say that, inasmuch as the bazaar, or haberdashery system, or craze, has seized upon other branches of trade, therefore it is proper for the jewelers to emulate the craze, for it will not do, when reduced to practice. A jewelry store is a place kept for the sale of luxurious goods. If it is proposed to maintain this feature as distinct and distinctive, it must be a jewelry store, in which legitimate jewelers' goods are kept; but if the bazaar feature is to dominate and *haberdasheries* constitute the largest portion of the stock and value, then it were a misnomer to call it a jewelry store; and, if it be necessary to run it in this way, the legitimate jewelry business cannot be maintained as a distinct business, but only as an adjunct, or "side-show."

With this definition of a retail jewelry store we have no fault to find. In his deductions from this definition, however, "Retailer" shows that he does not comprehend its full significance. Enterprising jewelers have not caught the bazaar craze, as he seems to think, simply because their neighbors had the infection, but because both have found it *profitable*. It is not mere whim or caprice, but sound business policy and natural law that has led to the diversification of stock in jewelry stores and the rise of the merchant from the tradesman. The term luxuries is a very broad one. The number of articles it embraces is constantly on the increase, and in his choice of novelties and attractions common sense and individual requirements must be the dealer's only guides. No other restrictions can he afford to put upon himself. He does not engage in business to carry out any preconceived theory, and his sole aim should be to make a success of it by all honorable means. Whatever conduces to this end, therefore, is good policy, and whatever makes against it is bad policy. If competitors either in his own or kindred lines have adopted innovations that attract custom which he thinks properly belongs to him, he has only to bestir himself and meet this competition on the same ground of enterprise. Grumbling and reliance upon the fast disappearing sentiment of guild loyalty will not avail, for competition is ruthless and knows no reverence for custom and antiquity. He may, if he choose, mount up on his dignity at this fancied affront from the haberdasher and the notions dealer, and indignantly assert his ancestral prerogative to handle jewelry exclusively, finding in the reflection that he is a "legitimate" dealer, while all these medley-mongers are illegitimate, a secret and unselfish pleasure, but meantime the bastards are running away with his trade. No; the jeweler cannot afford to put himself in any such straight-jacket. He should not and need not give up his proper identity as a dealer in luxuries, but within that limit there is almost boundless scope for development and enterprise. He must endeavor to make his store an art emporium for the cultured and refined classes of his town or neighborhood. He must keep pace with and even anticipate the demands of his clientage, or give place to those who will. Isn't it about time that those jewelers, who are clinging to

the past, began to see that they have neglected their opportunities and that, if they are to survive the stress of competition, they must stop selling their birthright for the mess of pottage of a mere name or sentiment?

Commercial Museums and Commerce.



IT SEEMS AS though the European countries were bound to distance us in every move they make toward the promotion of export trade, as though, in short, we were either careless or indifferent to the importance to us, as a manufacturing nation, of a wide market for our productions. They are constantly on the alert for means whereby they can push their goods into new avenues of trade, sparing no pains in their efforts to acquire valuable information concerning the requirements of foreign countries, of

no expense in the adaptation of the means at their command to meet them. The commercial museum has for some years been an important factor in their work in this direction.

In nearly all the large cities in Germany, commercial museums and sample rooms have been established, there is, a splendid Export Museum and Foreign Trade Institute in Brussels, France has several such institutions, so have the large manufacturing cities in England, and in the latter country it is proposed to establish in connection with the Imperial Institute, a commercial museum and bureau of information concerning foreign trade, that shall eclipse in completeness and perfect organization anything before attempted in this line. One of the most complete museums of this description now in operation is the Export and Import Museum at Frankfort, Germany, a description of which may inspire our merchants and manufacturers with an idea as to its usefulness, and encourage them to make some attempt to obtain similar facilities.

The Frankfort Export Museum is fitted up in the galleries of the New Exchange Building; its work may be classified under three distinct departments, and although receiving every assistance and encouragement from the government, it is supported entirely by the contributions of its members, merchants and manufacturers who are interested in export trade.

The first, or export department, principally serves to inform the manufacturers and merchants of this district regarding the mode of business in foreign parts, and to facilitate transactions with foreign consumers by exhibiting in all their various qualities the articles most current in trans-oceanic countries, stating the prices that were realized there, the mode of packing most in favor, the quantities sold, the local charges, the period for which credit is asked and allowed and so on. Thus the German manufacturer is enabled to see whether he can compete in exporting these articles to foreign markets and also to adapt his goods to the wants of the country to which they are intended to be exported.

The second department is the Museum of Imports, and is of quite as much value to merchants having dealings with foreign countries as the export section. Its object is to make merchants and manufacturers acquainted with the raw materials, which by constant improvement present new features and may be brought to answer various technical purposes, about which the German manufacturers are not able to decide before having seen specimens. Information is given from what quarter they come and prices at which they are sold, the freight to be paid, and, in general, all additional intelligence

which may tend to convey accurate information for their profitable employment.

Besides the foregoing departments which constitute the institution proper, there is a third, the significance of which and the value of its work cannot be overlooked. It is termed the Bureau of Information and its aim is to afford all possible information concerning foreign countries. It contains statistics of every description, technical and commercial periodicals, guides and directories, reports and custom tariffs not included in German trade records. The export sample rooms exhibit samples, designs, sketches, advertisements, show cards, price lists and so on, for industrial and other producers, giving the exact prices, measures, weights and all the required details in German, French and English.

Contracted with the ordinary world's fair or international exposition, these export museums are of inestimable greater value; whereas the one is only temporary is opened at huge cost and partakes, with its variety of entertainments, etc., to such an extent of the nature of a place of amusement, as to sacrifice much of its value for strictly commercial purposes; the export museum, which is maintained at a reasonable expense, is permanent and is devoted strictly and entirely to business. It is, moreover, thoroughly impartial in its dealings with the commercial and industrial world.

So far, in the United States, we have nothing that can in any way be compared in utility to such an institution as we have above described, nor any organized attempt on the part of either our government or the mercantile community to furnish our merchants and manufacturers at home or the buyers abroad of American productions with such facilities. As a means of supplementing the information collected by consuls and in connection with their labors, it would prove an invaluable aid to the extension of our foreign commerce, for it would accomplish the four most desirable objects in this direction. It would teach us what other markets require and how we could supply their needs; it would enable foreign buyers to obtain reliable and impartial information concerning what goods we make and on what terms we are willing to sell them. Knowing the demands of would-be customers, we should, at the same time be placed in most favorable condition to meet them.—*The Australasian and South American.*

The Use of Precious Stones in Furniture.



THE USES of precious stones seem to be multiplying. If late reports are true, the modiste's and even the dentist's professions will soon be called "kindred trades" to our own. Little surprise ought therefore follow the announcement that John Ruskin, the eminent English art critic, approves of the application of precious stones to the decoration of fine furniture, because as he very truly says, furniture can be made to last indefinitely, and hence is worthy of the highest artistic effects. The idea is not entirely new even in this country. The pair of rosewood pedestals with silver panels, made by Tiffany & Co., for the late Mary Jane Morgan at a cost of over \$2,000, were greatly improved in appearance by the addition on the sides of a number of pieces of red jaspery agate cut en cabochon. In California gold quartz is sometimes employed to ornament fine furniture, and with striking effect. The rare and exquisite ornamental qualities of the agatized wood of Arizona for inlaid work are now becoming known, and ere long no doubt we shall see it used extensively in furniture and interior decoration. Instances of the use of precious stones for decorative purposes are more common in Europe and the east than on this side of the Atlantic. The famous peacock throne of the great Shah of Persia is supposed to have contained millions of dollars' worth of gems, and to this day, particularly in the Catholic countries of Europe, altars are to be seen lavishly orna-

mented in this way. Of course these are exceptional examples, but they show that the fitness of precious stones for the purpose indicated by Mr. Ruskin has already been recognized. It is the extension of this use which he advises and which every dealer in precious stones would be glad to see. England, the country of heredity, of ancestral homage, of heirlooms and historic monuments, ought to take more naturally to such an innovation than the United States, whose people, the critics tell us, are deficient in stability and veneration. The restlessness and desire for change characteristic of Americans extends even to household furniture, and it is to be feared that our society leaders would not look with friendly eye upon any plan to make furniture more durable. Novelty rather than durability is what they want. The man who devises a piece of furniture that can be transformed every hour into a different style will get the vote of the female sex. But the idea is certainly practical. The enrichment of articles of household use by precious stones would cultivate the taste both of those who make and of those who buy them. It would be a direct benefit to the dealer in precious stones, and might tend slightly to enlarge the bump of veneration in the aristocratic American cranium. Mr. Ruskin's opinion in matters of taste is the highest known authority, and our artistic cabinet makers might well ponder it. Mr. Kunz, the gem expert of Tiffany & Co., states that the stones best suited to the purpose are, agate, lapis lazuli, malachite, coral, amber, crocidolite and baroque pearls.

Dakota. One or two of the dealers have apparently had a better trade even there than for some time, although crops were not good in that region. Everyone is looking, however, for a new era of prosperity in the West, and particularly in Dakota. This, they think, will come with statehood for the two Dakotas, Montana and Washington Territories, and a return to good prices for the cereal products of the country. Dealers are considerably interested in this plan of reorganization. The exemption laws of the territory now are exceedingly liberal, so liberal, in fact, that unless a man is perfectly good the jobbers are very reluctant to sell him. Dealers suffer from inability to carry a line of goods through the over generous exemption laws. Of course an effort will be made when the territory is made into a State, or two States, to secure the enactment of better laws affecting the subject of credits, and if there should be, as there is a prospect that there will be, a new era of prosperity in these newer communities, it will be easy to accomplish this result. New men, and more conservative men, than marked the early days of the territory will be elected to the legislative bodies, and the experience through which the people have gone has taught them that reasonable exemption laws are better than those behind which dishonest men can hide in safety. This subject has had a great deal of attention recently from the jobbers of jewelry, as well as the jobbers in other lines of goods.

Closely allied to this subject of credits is a decision of the United States Supreme Court sustaining the Minnesota insolvent law. The case had its origin in a jewelry failure here 'way back in December, 1883. A. B. and Gustave Van Norman were then in the jewelry business in this city on Nicollet avenue. In December, 1883, just before Christmas, their stock was attached to satisfy a claim of J. H. Purdy & Co., of Chicago. Then followed an assignment and the sheriff delivered the stock over to C. C. Bennett, the assignee, under the insolvent law of 1883. The United States Marshall took possession of the store and the effects. The assignee brought suit to recover the value of the goods taken by the marshal and a verdict of \$5,432 was secured. The case was appealed to the State Supreme Court, where a verdict of the insolvent law was sustained. Then there was an appeal to the United States Supreme Court, where the order of the court below was affirmed. The victory, therefore, was for the assignee, Charles C. Bennett, and the creditors. The decision is chiefly of value in establishing the constitutionality of the Minnesota insolvency law, and of interest probably to the jewelry trade as a bitterly contested case, in which more than one party in the trade was interested. It is five years now since the failure took place, and of course the incident had almost been forgotten.

The peripatetic jewelers and watch salesmen have already commenced their annual tours through the pineries. I know one man who has eight salesmen in the woods, chiefly engaged in selling watches. The wholesaler who furnished this party his goods tells me that the very best watches are used and sold at a little better price, perhaps, than is realized in the stores in the cities. The salesmen accept orders on the firms for whom the lumbermen are working, and generally have to carry these until spring, or discount them at a pretty liberal percentage. Fewer logs are being put in this winter than usual throughout Minnesota and Wisconsin, which means, of course, that there will not be so many men employed, and the probabilities are that not so many goods will be sold there as in preceding years. However, the custom has grown in favor with the men, who have gained confidence in a good many of the dealers that make a business of selling in this way. It is an easier thing to give an order for the payment of a watch than to turn out the cash, and the Mackinawed lumbermen, who immure themselves in the woods for the winter, do so with a great deal of freedom, and find themselves in the spring with comparatively little money for their winter's work. The watch salesman has got a generous slice of it.

Several additions have recently been made to the number of retail dealers in St. Paul and Minneapolis. Stoll & Martin have established themselves on Seventh street, in St. Paul, and E. C. Haines



[FROM OUR SPECIAL CORRESPONDENT.]

HOLIDAY SIGHTS AND SOUNDS IN THE TWIN CITIES.

MINNEAPOLIS, Minn., December 14, 1888.

The stores are all resplendent with holiday illumination and thronged with people who are buying or who are tempted to do so by the beautiful displays made by the local dealers in both this city and St. Paul. Stocks are perhaps not so large as those put in in some previous years, but such wonderful progress has been made in manufacturing, and so many articles in the line of bric-à-brac are handled by the dealers now, that the retail stores are more than ever brilliant. Of course it is still early to judge what the result will be, but indications are that the trade in these two cities will be somewhat less than in previous years. There are reasons why this should be so. For a number of years the real estate business has filled the pockets of a great many people with ready money, and made them feel rich enough to buy luxuries, such as jewelry, freely. For the past year there has not been a great deal of activity in real estate and the money market is closer than it has been in some time. That is, fewer people feel that they have money to spend, and, of course, this will have an influence first upon the jewelry trade; but wealth has grown rapidly in these two cities, and a large number of people will be able and will buy freely of the best that the jewelers have to offer. Socially Minneapolis has been particularly brilliant this fall, and this has not been without its result upon trade. Brilliant weddings, however, have not been as numerous as in some previous years.

While this is the case in the two cities, wholesale dealers report trade in the country as much better this fall than for some time past. This is the result, undoubtedly, of the good prices which are being received for the cereal products in the territory surrounding us, where goods are sent by the jobbing houses in St. Paul and Minneapolis. The only exception, perhaps, to this statement is north

on Rice street, in the same city. In Minneapolis C. J. Cook & Co. are a new firm, located on Washington avenue.

J. R. Elliott, the Nicollet avenue jeweler, had his barn burglarized a few nights ago, and his buggy, robes and everything except the horse and stable carried off.

At Eustis Bros., the other day, a large shelf of glass in a show case, on which was displayed their stock of cut glass, gave way, breaking several hundred dollars' worth of goods and depleting their stock in that line just at the time when the demand will be presumably good.

Dealers here are not making such ingenious window displays as usual. A year ago at this time there was a sharp competition between the principal local dealers in the line of unique displays. Now there is apparently a rage over the advertising of watches proof against electricity. Miniature dynamos are displayed in some of the windows, around which are hung watches ticking on unaffected by the currents that are supposed to be in that immediate vicinity. Electricity has become such an element in our every-day life that this has become an important question.

NOTUS.

The Marsfels Watch Collection.

[From the *Deutsche Uhrmacher-Zeitung*]

Continued from page 54, December, 1888.

PART II.



THE NEXT piece of interest is a watch, the movement of which, including the verge, pinions and barrel, is entirely of wood. Even the wheels, fusee, balance, dial, in fact everything beside the case, are made of wood with infinite patience and trouble. The making of the small hollow pinions, the thin steel rods of which are let into wooden discs, must have required a special amount of skill. Also, this watch has no balance spring, and has a catgut in place of a fusee chain. Its whole style and make indicate that it was manufactured in the XVIIth century.

We are next interested in an exceedingly high verge watch, which, upon three very handsomely engraved silver

dials, as well as upon different sets of figures and segments, shows the following: Hour and minute, week day, phases and age of the moon, month and zodiac. The movement is worked with the highest degree of skill, especially the pillars, which are carved into angels' heads surrounded with leafwork; they are, intrinsically, pieces of masterwork which would cause exclamations of admiration from every lover of art.

Another, also a very high verge watch, similar both in age and beauty to the preceding, is probably the masterpiece of a diligent and skilful watchmaker of the XVIIth century. The movement, executed with exceeding care, the gilt and richly ornamented dial, the admirable balance bridge, and the pillars, very artistically embellished with brass, steel and silver—all speak to us of the master, for whom no work and no trouble was too great to produce something really handsome which shall be an object of admiration to future ages, and thereby earn for himself an undying name.

In comparison with the above two, we pause before the next verge watch, the entirely different form of which, as well as various other signs, causes us to assign its manufacture to the year 1800. It is distinguished especially by its extremely well painted enameled dial upon which revolves a celestial globe, standing in depth with the

contrate wheel, which imparts to it a peculiar charm, on account of its ever-changing motion.

Before we next pass to the description of a group of watches, which, as far as their peculiar construction is concerned, may be called unique, as it would be difficult to find another sample of a number of them, we will give a short account of two repeating watches, both of which were made in the last century.

The first is a gold cylinder repeating watch of the older system,



FIG. 3.

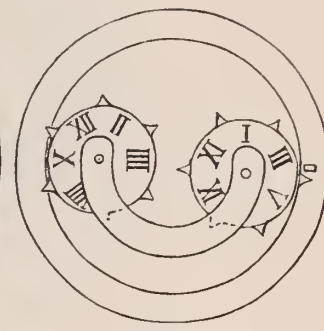


FIG. 4.

which strikes upon three exceptionally well-sounding gongs; it is especially valuable on account of an enamel picture, painted doubtless by an artist of high renown. The subject of the picture, however, is of such a nature that it is not well suited to be described in detail.

The next repeating watch belongs the same class; it is a verge escapement with a perforated dial; its movement is connected with a secret dome, in which are seen two small gold figures representing two lovers in the consummation of love.

Among the pieces of the collection remarkable for the original construction of their movements, our attention is first attracted by a high



FIG. 5.

verge watch with antique silver dial with an exemplary chased group: Saturn dragging the cars of Helios. This watch, dating to the past century, was made by Mi Löffg, of Vienna. It has no hands. The time is shown upon the dial in an ingenious as well as original manner, and is effected by a highly simple arrangement, to be described in the following. Fig. 3 gives the front view. It will be

seen in the cut that above the group on the silver dial is a semi-circular opening through which is visible a second gilt dial underneath. Above the opening of the silver dial are engraved the minutes from 1 to 60, and underneath it the quarter-hours from I to IV. The lower second dial is movable, and revolves once in two hours. This dial has two circular openings lying exactly opposite to each other, through which the figure of the hour appears upon a silver disk.



FIG. 6.

For this purpose, a fixed pin is fastened upon and near the edge of the front plate, over which the dial revolves. The dial passes freely by it, while the projecting teeth of the two figure teeth first lean against the pin, and in the further revolution of the dial are displaced to a corresponding quantity by one hour.

As the dial with the two discs revolves once in two hours, one of the discs passes each hour by the stationary pin upon the plate, and, as has already been said, is pushed forward one hour. Let us suppose, for instance, in the opening under which is located the disc with the even figures, we see figure IV., and in the opposite, under which the disc with the odd figures is, the figure III. The opening with the figure IV enters from the left first into the semi-circle of the silver dial, through which it slowly passes in one hour, while the other dial, which is during this time under the Saturn group, therefore, invisible, with the odd figures, pass by the stationary pin and is thereby turned farther by one tooth, or from III to V. When next figure IV has passed its course through the semi-circle, it disappears to the right under the Saturn group and figure V enters from the left into the semi-circle, in order to pass through its course in the same manner. The disc with the escaped hour IV meanwhile keeps on its way invisibly, passes the stationary pin and is also turned one tooth farther thereby, so that at the next hour it enters again with the fig-



FIG. 7.

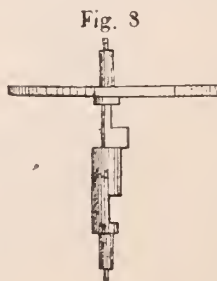


FIG. 8.

ure VI from the left into the semi-circle of the silver dial; this procedure is repeated every hour in the same manner. It is astonishing, indeed, to consider by what means the capable old master has managed to produce such a charming and at the same time easy way of indicating the time, whereby all disturbances produced by defects in the motion work are utterly excluded. This watch may justly be regarded as the precursor of the watches with springing figures (with-

out hands) which have appeared in market within the last few years.

An equally original and none the less interesting piece is the watch shown in fig. 5, dating to the early part of this century. Its dial is a metal plate, blue enameled, with thin, white strokes, upon which are fastened two quadrants. Upon one of them are marked the hours from 1 to 12, upon the other the minutes from 1 to 60. It also contains, chased, two soldiers in fencing position, one of them standing on each side of the quadrants, is shown in the figure. By pressing upon the push button, the soldiers draw their sabres, the one to the left pointing with his sabre to the hour, while the one to the right points to the minute upon the respective quadrant. The construction of this very original mode of indicating the time is shown in fig. 6, which shows the movement without the dial.

Upon the arbor of the center wheel (which, however, in this instance, stands out of the center) is the cannon *a*, upon which is the snail serving for determining the minutes. The cannon pinion *a* drives in the customary manner a minute wheel, the pinion of which, however, does not here depth into the hour wheel generally sitting upon the cannon pinion, but in a wheel located to one side, which it revolves once in twelve hours. Upon the latter wheel is fastened a snail for determining the hour. When the pendant is pressed down, the two levers *b b* are first unlocked, which unlocking

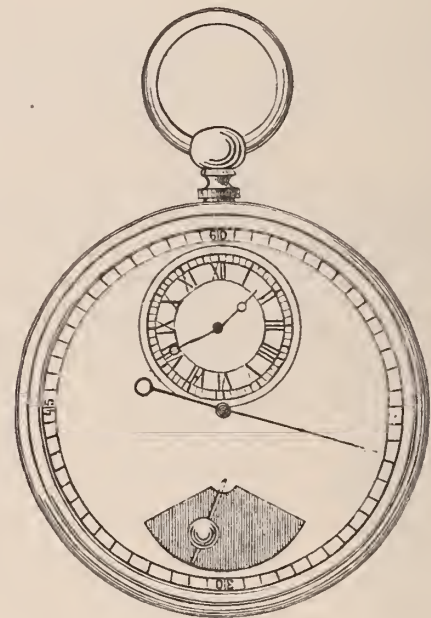


FIG. 9.

actuates the four racks *c c* and *e e*, each two of which together depth into a pinion, *f*. Upon the arbors of the two pinions *f f*, are placed the arms of the soldiers. The further performance is as follows: By the unlocking of the levers *b b*, the racks *e e* (situated above the center of the plate) lose their fulcras *d d*, and are then moved upward by springs operating upon them. In consequence of this motion, the pinions *f f*, into which the racks depth, turn an appropriate distance, and with them the arms of the soldiers, which sit upon the pinions, and thereby carry with them downward at the same time the lower stationary racks *c c*. These racks, *c c*, are provided with projections, which in their downward motion finally strike upon the snails, the one lying to the left upon the hour rack and that to the right upon the minute rack. According to the distance, now, when the push button is pressed down, by which the racks are removed from the center of the snails, the soldiers point to an earlier or later hour or minute upon the quadrant. When the pressure upon the push button ceases, all the parts of the motion work, and with them also the arms of the soldiers, are by a spring brought back to a position of rest. The cannon pinion *a*, sitting with gentle friction upon the center wheel arbor, is provided with a setting square passing through the dial, for the purpose of setting the motion work mechanism.

A peculiar idea is embodied in the following very rare watch, belonging to the first half of the last century. The high movement is in its general construction similar to the verge watches of that age,

except its escapement, which is neither a verge nor a cylinder, but both together, as is visible from the accompanying enlarged cut.

The escape wheel, fig. 7, consists of two wheels placed above each other—a cylinder wheel, the teeth of which have the shape of those of the old flat cylinder wheels, and a flat vertical wheel of the common kind. The part of the escapement is composed of a half cylinder, provided above with a verge pallet, as shown in fig. 8.

The performance of the escapement is as follows: A tooth of the cylinder wheel falls in the direction of the arrow upon the cylinder, raises it in its progressing motion, and drops, after the highest place of the tooth has passed on the cylinder notch. At this moment the next following tooth of the verge wheel falls on the verge pallet, is first recoiled by the continued vibration of the balance, and then

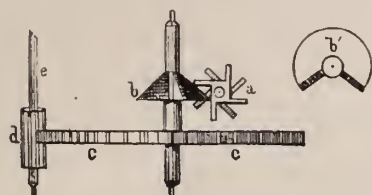


FIG. 10.

effects the lifting in the other direction. After this, one of the teeth of the cylinder escape wheel falls again upon the cylinder, and this performance of the escapement is repeated from tooth to tooth.

It is self-evident that the rate of the watch with this escapement can only be defective, because it possesses only half a repose. Nevertheless, it may be regarded as an improvement of the old verge escapement. It appears that the old maker could not yet divorce himself from the verge escapement, in consequence of which he combined it with the cylinder escapement. The latter was invented in 1720 by the celebrated English watchmaker, Graham, but was to a greater extent used and properly esteemed only years after having been invented. The greater number of watchmakers of that age viewed it with distrust, as its fundamental principles had not been well established yet, and the first trials made with it did not result to satisfaction.

And this may have been the experience of our master. He had instituted perhaps his first experiment with the cylinder escapement, which resulted disastrously, and he then thought that he might have better luck by combining it with the verge.

We will at this opportunity mention another verge watch, equally dating to about 1730. The verge of this escapement does not stand vertically but horizontally, and lies at the place generally occupied by the vertical wheel; and in place of the contrate wheel, which depths into the vertical wheel pinion, it contains a vertical wheel which depths into the verge pallets. Below, on the upright balance staff, which moves in the two verge bridges, is a pinion, into which depths a small contrate wheel fastened upon the horizontally lying verge, by which the reciprocating motion of the verge is transported upon the balance staff.

It appears that it was the watchmaker's principal idea to construct a peculiar arrangement of the vertical escapement, because this novelty cannot by any means be considered an improvement.

The following piece of this collection is indeed a rare and curious watch, with springing concentric second, such as has perhaps been never seen yet by any of our readers.

The accompanying cut, fig. 9, shows a full size front view. It has a silver dial, in which above the center is sunk a small gold dial, upon which the watch shows the hours and minutes. In the center is the long seconds hand marking the seconds upon the circumference of the dial, and below the center it has a cut-out, through which is seen, oscillating upon a blue bottom, a small pendulum with a gold bob. The steady, uniform oscillations of the pendulum, each of which lasts a full second, impart to this watch a very peculiar charm, and the beholder is at first glance tempted to believe that these seconds oscillations of the small pendulum are produced only by a com-

plicated mechanism. This, however, is not by any means the case, because the slow pendulum oscillations and balance vibrations are produced in the simplest manner possible by an escapement specially constructed for this purpose.

The center wheel stands in the center of the small dial, therefore outside the center of the plate; in the center of the latter stands a contrate wheel, which is here the fourth wheel, as upon its prolonged pivot sits the large seconds hand. The contrate wheel teeth, which are on the lower side, gear into the pinion of the escape wheel, which lies horizontally in bearing in two bridges similar to the vertical wheel of a verge escapement.

The main parts of the very peculiar escapement are shown in the accompanying cut, fig. 10. The escape wheel *a*, resembling a ship screw, consists of two wheels, each with four teeth, of a form shown in the cut, standing above each other. When it receives an impulse from the train, a tooth drops alternately from *a* upon the cone *b*, provided with a notch, *b'*, on which it slides down and imparts to the arbor of the cone a short, rotary motion toward one side, corresponding in size with this procedure, while the next succeeding scape wheel tooth effects the same kind of a rotary motion to the other side, and in this manner is repeated the reciprocatory turning of the cone arbor from tooth to tooth. This arbor carries under the cone the wheel *c*, the teeth of which gear into a pinion, *d*, which sits upon the balance staff *e*, whereby the rotation of the cone arbor is at the same time transported also upon the balance.

Under the wheel *c*, upon the cone arbor, is fastened also the small pendulum visible upon the dial, which consequently must gain in the slow, reciprocating motions of the cone arbor, which produces the seconds oscillations. The fairly heavy balance is in the ordinary manner connected with a balance spring, by which the speed and regularity of the turnings of the cone arbor are effected in a simple manner.

"There is nothing new under the sun," we are forced to exclaim at the inspection of another piece of the collection—a *perpetual*, dating to the end of the last century. On comparing it with one of Löhrr's perpetuals, which have entered into commerce for the last ten or twelve years, because we find in this old watch already a very similar contrivance for automatic winding, as shown in the

Fig. 11.

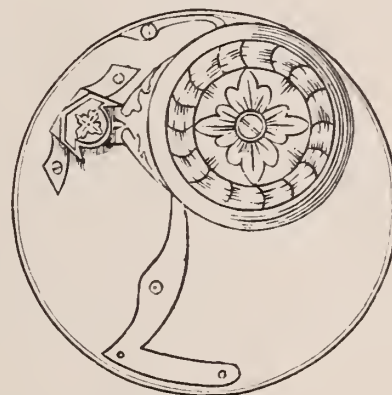


FIG. 11.

perpetuals" of the most recent invention of modern time. Fig. 11 shows the back plate of the movement with the self-winding arrangement.

The double-plate movement of this old watch is, in its general construction, like a flat verge watch of that time, although it has already a cylinder escapement. The winding is performed by the hammer, oscillating like a pendulum, and shown in the cut; when wearing the watch, at each step taken the hammer moves downward, but is thrown back again by a cylinder spring fastened upon the hammer arbor. With the hammer arbor is, beside this, connected a ratchet arrangement with maintaining power in such a manner that the main ratchet wheel, at each downward motion of the hammer, is turned forward several teeth, whereupon the maintaining power

facilitates its return motion. Upon the main ratchet wheel is fastened an ordinary toothed wheel, which again stands in depth with a wheel upon the spring arbor, so that at each forward motion of the former is transported upon this latter, and in this manner the mainspring of the watch is at each descending motion of the hammer wound a certain portion, similar as with Löhner's "perpetuals."

We then find in studying the works of our old masters many a thing which was already invented by them, but somehow was forgotten in the course of time, in order to re-appear many, many years afterward to pose as an interesting invention of our "modern age."

(To be Continued.)



[FROM OUR SPECIAL CORRESPONDENT.]

THE STYLE OF THE NINETEENTH CENTURY—NATURE THE MODEL OF THE JEWELER—DEDICATION OF THE NEW SCHOOL OF HOROLOGY AND AWARD OF PRIZES—NOVELTIES IN SCARF PINS.

PARIS, December 5, 1888.

A style is supposed to represent exactly and thoroughly the artistic tendency of a period. Therefore, we may look upon it as being an outgrowth of the superior likings and longings of a generation. Our object is not to pass a review of the various conditions of art in bygone centuries, but simply to see whether the present age can boast of a style. Most people seem to say no. We are of a different opinion. It would be rash to assert just yet that our time has found a novel and definite form of art, but it is perfectly evident that there is a special bent, a constant effort in one direction, which, no doubt, will leave a mark in history.

The repeated and wonderful discoveries of science have turned all minds towards the practical, and imagination, so exalted of old, when most daringly independent, has become a simple mirror of Nature, the more to be valued that it reflects with the greatest accuracy what does really exist. That faculty which our modern artist has of reproducing exactly what he sees or even what he has seen must be accompanied with an unfailing taste; otherwise, he might fix on canvas, or represent in stone, bronze, silver or gold, some very offensive images, with the excuse of copying nature. Very talented men have been a prey to mistakes of that kind, some in painting and many in literature, but jewelers and silversmiths must claim our exclusive attention now, and among them we find, as a rule, an unflinching tendency to copy only what is pleasant to the sight, what is sure to meet with general approbation.

The most delicate works of nature, such as birds, insects and flowers, attract more and more the attention of Parisian jewelers who seem always pleased to find some new difficulty to overcome in reproducing to a nicety the innumerable shapes and colors of those exquisite models. The graceful curves and folds of leaves or petals; the downy surface of some, the hard gloss of others; the satin-like, velvety or moiré appearance of many must be obtained as near as possible by treating the metal, silver or gold, in different ways. To give almost life to the imitations of the loveliest winged beings, all the treasures of the gem kingdom are ransacked. Diamonds, pearls, rubies, sapphires, emeralds, topaz, etc., grouped within a graceful mounting are tastefully contrasted, according to the overruling laws of harmony.

Although silversmiths are supposed to do nothing but reproduce ancient styles, they show the same tendency to copy the works of

nature, and never think, as their ancestors seemed to (with a conviction only to be found in men of genius), that they can improve upon it. All the pieces of a *tête-à-tête*, a toilet set or a smoking service, in oxidized silver *repoussé*, exhibit very often on a conventional background, hammered or shagreened, a spray of flowers thrown across with apparent carelessness. Here and there a fly or a creeping insect seems to move in a natural, zig-zag manner. If the work in high relief is replaced by etching or aquafortis, sketches from modern life, or vistas in woods, fields or gardens appear in a still more picturesque way on boards, cups, goblets, etc.

As a conclusion to the above short hints on the present tendency of art, we need only confess that our practical time cannot sincerely enjoy looking at scenes of fairy land, nor grow enthusiastic at the contemplation of unending rows of elaborate but purposeless ornaments. Consequently, artists of whatever description must represent natural and palpable beauties if they mean to interest the people they appeal to, who merely want to be reminded of what they have seen, or shown what they might happen to see, worthy of their admiration.

On the 21st of November took place the official opening of the new building of the School of Horology, in the Rue Manin, 30, near the Buttes Chaumont, a very quiet and healthy neighborhood. M. Pierre Legrand, Minister of Commerce, presided on the occasion, and a large and sympathetic audience listened to the various speeches with the greatest interest. M. Rodanet, President of the Clock and Watchmakers' *Chambre Syndicale* and director of the school, that owes largely to his constant efforts the satisfactory progress it has made, gave a detailed account of the difficulties which it encountered at the beginning, more than eight years ago. As it is entirely supported by the members of the *Horlogers' Chambre*, no influence but a sound and healthy one acted upon it, and therefore, as a consequence of an energetic and well-directed impulse, it grew more and more prosperous. The new building is prepared to receive at once 60 day scholars, besides 40 boarders, but the increasing demands for admittance will make it necessary to provide for a great deal more than a hundred pupils. Both the theoretical and the practical teaching are as complete as can be, and a large library, containing all the books treating of the science of horology, is at the scholar's disposal.

Most persons who attended the interesting meeting of the Rue Manin, met again at 7 o'clock in the evening at a banquet which took place in the Continental Hotel. A grand ball of 600 people followed, and we are happy to say that the ladies did not think it at all improper to come with all their jewels, which were very artistically distributed on various parts of the dresses, around the necks and above the foreheads of the fair patronesses.

On the 28th of October, at the *Arts et Métiers*, were distributed the prizes awarded by the Jewelers' *Chambre Syndicale* to the cleverest among the pupils of our special art school. M. Berger, the organizer of next year's exhibition, who had consented to occupy the chair, made a most interesting speech. M. Boucheron, who spoke after him, endeavored to stir in the bosoms of his young listeners an ambition for that valuable knowledge, which alone, he said, would enable them to devise new and elegant models, combining the idea of beauty with that of absolute fitness.

After the deserving pupils had received their rewards, the Jewelers' and Silversmiths' *Société d'Encouragement* delivered medals and prizes in money to workmen who, for a long term of years, had proved faithful to one house, and to boy and girl apprentices whose conduct had been found exemplary. French workmen are not prone, as a rule, to leave a place where they have learned the A B C's of their work. We have known many who even distrusted some very tempting offers, and preferred to stay with a master who gave them all the year round a moderate but sufficient salary, than to jump into a situation which, however promising, might not pay so well in the end.

In a shop window in the Palais Royal are some very original scarf

pins. One represents two tiny boys in enameled gold, standing, both side face, opposite each other. Their arms are lifted and their heads turned up, looking eagerly at a ball, which is a big grey pearl, supposed to be in the act of falling. Another is a lady, dressed in gorgeous Louis XIV. style, stretching out her hand, which holds a piece of cake, towards a sparkling bird coming down to snatch the morsel. The third one shows a harlequin in his traditional square-colored costume, lazily reclining, with his legs crossed, on a green-gold garden bench of old-fashioned shape. He is serenading on the guitar, the object of his attention being a crescent made of moonstone on which have been sketched queer features, somewhat distorted by a ludicrous smile. Those scarf ornaments are so arranged that the stem of the pin is completely hidden.

We have seen at another place some rather elegant silver scissors for grapes, consisting of a stork which stands on the edge of two oval rings apparently made of bent old wood, with one claw on each. The body of the ungainly bird is slightly drawn up, and his long beak (acting as the double blade) points to the skies.

Finely chased bears in brown gold, stretching flat and at full length, are handsome paper weights of massive appearance. The metal is worked in such a way that the fur looks quite real. The head is half lazily and half slyly resting on one leg, and the two back paws are turned up in a thoroughly natural manner. JASEUR.



[FROM OUR SPECIAL CORRESPONDENT.]

A WATCH FACTORY FOR ATLANTA—TRADE NOTES AND PERSONAL GOSSIP.

ATLANTA, December 10, 1888.

It is now definitely settled that a watch factory will be built here in the next few months to make the Hanson watch, invented by Mr. Hanson, of this city, which has been pronounced one of the simplest and best watches on the market. Mr. Hanson has just received five hundred watches that he had made in Europe, and they are models of beauty for the low price at which they are sold. The factory will, we learn, have a capital of one hundred thousand dollars. The stock has been spoken for, and it will not belong before Atlanta will have a watch factory. Success to the enterprise.

The jewelry trade is now in its brightest stage. The retail stores are full to running over with artistic jewelry. Several firms here have made large importations, and some very fine goods are in the market. While trade is good, it cannot be said that it is up to its usual standard at this season of the year. For some reason or other people are buying less than they did last year; yet business may change and brighten in the next few days.

The wholesale house of A. L. Delkin & Co., on Whitehall street, is reported as doing a good business. This is comparatively a new firm, yet the judgment displayed in the management of the business has been such as to give it a good standing both at home and abroad.

George T. Beeland, of Macon, Georgia, is a young jewelry merchant of much prominence. His store is one of the neatest in the South.

A. F. Pickert, of this city, has moved his store to one of the most convenient locations in the city.

L. Netzell, who now has a store at Pickert's old stand, carries a splendid line, and his popularity will insure him a good trade.

H. R. Caulfield, with headquarters in Atlanta, is organizing a large number of watch clubs in Georgia and Alabama. He already has them organized in more than a dozen cities in these two States, in some of them getting up as many as twenty-five different clubs.

The old reliable jeweler, William Bollman, has as many friends in Georgia as any man in his profession. The fact that he is so reliable in all his dealings gives him a standing second to none.

T. J. K.



A Lady's Rambles Among the Jewelers.

THE month past has been, unless appearances were unusually deceptive, an exceedingly profitable as well as busy one for our jewelers and silversmiths. Never have the shops been filled with more extended, varied and attractive stocks. A notable feature of the goods designed especially for holiday gifts, was the remarkably large production of articles suited to the requirements of a popular trade; articles decorative and useful, and at prices within the reach of average buyers. The display of costly articles for the exclusive fine trade was also an unusually varied one.

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SMALL gifts of silver that cost comparatively little money, proved quick selling articles, and not a few of these will be found popular throughout the year, for such occasions as birthdays, christenings, progressive euchre parties and other times where presents of moderate value only are called for. Numbered among these elegant trifles are calendars set in frames of *repoussé* silver; silver mounted pen wipers, book marks in styles too numerous to mention, paper knives, letter clips and rulers of silver, pencils, pen holders, ink-stands, mucilage bottles, paper weights, frames for photographs, thermometers, etc., etc., etc.

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SILVER mounted manicure articles, which for some time have been counted by New York dealers as their most popular goods, were never in greater demand, and the same statement holds true regarding toilet articles of every description. The consequence is these goods are made in several grades to suit the needs of many classes of buyers. There are beautiful and exceedingly costly productions that proclaim their high intrinsic value, not only in the amount of precious metals and jewels employed, but the handiwork of the expert silversmith and the clever conceit of the artistic designer. There are also an infinite variety of sterling silver articles showing pleasing forms and more simple styles of ornamentation, and then follows a bewildering assortment of silver plated goods so well made and so admirable in every respect, as to win commendation even from patrons who can afford to pay for the solid articles. Manicure articles, by the way, are this season displayed on open silver trays, and the same fashion is observed with other articles for the toilet.

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ARTICLES of silver for the writing desk represent an exceedingly popular line of goods, and include many new styles as well as some old ones revived. In illustration of the latter are silver mounted ink-stands on silver trays, along with a sand box of silver. Some of the

new paper weights take on grotesque forms, as, for instance, the ones simulating in metal quaint gnomes in remarkable attitudes and with weird faces. A Newfoundland dog in oxidized silver furnishes a formidable looking paper weight. A novel paper weight appealing to Southern patrons, is the one that simulates in form and coloring a bale of cotton. Mexican onyx, Labrador spar and Russian bronze, all figure in the new paper weights.

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ALTHOUGH small articles in silver take the precedence during the holiday season, there is more or less demand for silver tableware, especially odd pieces, such as epergnes, fruit and bonbon dishes, punch bowls, claret jugs and the like, enclosed in satin lined cases. There appears at the present time quite a fancy among the fashionable folk for table ware that copies old English and French designs. Much of this modern-antique ware is decorated in flat chasing; there also appears much pierced work and fluting, especially as a border or finish to a piece having a bright center.

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Low forms prevail for table silver, and there is a prodigal display of epergnes and candelabra that are made broad and low enough to admit of an unobstructed view of the entire table. Some of the newest epergnes are so constructed that the decorative side dishes which surround the center piece may be detached and used separately when the occasion does not call for an elaborate and massive epergne.

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SILVER candlesticks standing some twelve inches high and designed to take the place of the more elaborate candelabra on dinner tables when only a limited number of covers are laid, received an impetus at Christmas, and promise to be popular for some time to come. From four to six of these candlesticks are used, according to the table. Ladies possessing both candelabra and the single candlestick, reserve the first named for quite formal dinners.

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SILVER baskets for bread, cake and fruits in quaint designs, with irregular fluted edges or pierced work borders, are just now exceedingly fashionable, and the same statement holds true concerning all kinds of small low dishes, including those for bonbons, salted almonds and olives. Low flaring fruit dishes with highly polished surfaces are artistically finished with borders in *repousse*, simulating a wreath of vine leaves, on which rests at irregular intervals a bunch of grapes.

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RUSSIAN silver, which appeared last year in limited quantity about the holiday season, may now be found in our leading retail stores. This silver, which comes for the most part in small articles, is decidedly decorative in effect, and makes a pleasing variation in the show cases, with its bright colored enamel and its realistic designs.

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THE combination of glass and silver, which has become of frequent occurrence, not only in table pieces, but in novelties for writing desks and libraries and fancy knick-knacks generally, affords some pleasing designs. English cut glass, the cut glass of our own manufacturers, Venetian glass, cameo glass and fine pressed glass, are all employed in this combination.

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DECIDED novelties are scent bottles, flagons, vases, paper weights

etc., in cut glass, that has several distinct patterns cut in one piece. Articles in cameo glass show three and four shades of color.

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A GOOD augury for the coming season is the present unquestionable popularity of jewelry, especially gold and silver ornaments, and ornaments set with small but precious colored stones. At home, in Paris and in London, extensive preparations were made by the jewelers to meet the increasing demand for personal adornments at the holiday season. Not only has the Princess of Wales made the ladies all happy during the past twelvemonth by showing her approval of jewelry, but the Prince of Wales has been equally kind to the sterner sex by appearing in evening dress with a gold chain and diamond studs showing conspicuously on the low waistcoat and broad expanse of shirt front.

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THE wide latitude permitted by Dame Fashion in the selection of jewelry is a point worthy of notice, for it insures a much longer run than if set designs and a few prescribed styles of finish only were permissible. In a word, the shapes display such a great variety no two ladies need wear quite the same style of ornament, and when weary of the assortment on hand, the most capricious have only to take a ramble among our jewelers to pick up quite a new collection.

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AS HAS been intimated, jewelry set with colored precious stones is in high favor. Colored diamonds and pearls are in special demand, as are opals, sapphire, rubies and fine garnets in the more expensive ornaments. Semi-precious stones, showing beautiful shades of coloring, appear in jewelry that sells to a good and large patronage at fairly moderate prices. These latter stones appear also in *repousse* silver frames, as pendants to meerschaum pipes and in garter and belt clasps.

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COLORING stones, as a rule, appear in association with a diamond or a white pearl, and, when set in a cluster, the white gem becomes the central one.

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IN ANTICIPATION of the January weddings, it may be well to mention the fact that pearls are equally as fashionable as diamonds for brides, and if the bride be young, much more appropriate to wear with the bridal toilet. It goes without the saying, of course, that a bridal present of pearls by no means conflicts with the always desirable solitaire ear rings and any other diamond ornaments to wear thereafter.

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JEWELRY set with pearls is much worn at the present time. Pearls are especially prized as necklaces, not only when the wearer can afford several strands of fine pearls, but in the simpler ornaments, as, for instance, two tiny gold chains held in place at intervals by little "motifs" of pearls,

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FINE moonstones continue to gain admirers, and not a few scarf pins and finger rings for gentlemen are set with one of these gems. A hair ornament seen recently employed a rare moonstone as a cen-

tral object, from which appeared to spring fine gold wires set with brilliants.

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ENAMELED jewelry, both with and without gems, still charm the fair sex. During the holiday season just passed, brooches, consisting of a small cluster of flowers enameled in nature's colors, proved to be good selling articles. Many of the new bonnet pins—which, by the way are larger in size than formerly, represent in enamel a single favorite flower.

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AN ARTICLE on jewelry nowadays without a mention of decorative hair pins and combs would indeed be incomplete. The furore for these useful and attractive ornaments is at its height. Every lady possesses decorative hair pins of one kind or another. These pins are worn as occasion requires; sometimes to hold the bonnet in place and always to dress the coiffure. The hair is worn both high and low with evening toilets, and is held in place by small fanciful combs and by several jeweled pins.

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SOME of the newer hair pins are virtually combs, being two and three pronged, with tops simulating a gem-set band or scroll. These pins are not to be confounded with the decorative combs, which come in small sizes and are sold in sets of two and three. The combs have fine teeth, after the usual fashion of hair combs, and are of tortoise shell. The tops are sometimes straight and sometimes curved, and may be of tortoise shell or of gold or silver. Renaissance and Greek patterns have been revived to some extent in hair combs to suit the First Empire and Directoire costumes. For evening wear, both combs and pins are set with gems.

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HAIR pins much patronized by ladies with blonde hair, are balls and loops of gold studded with jewels. Enameled hair pins representing flowers are much admired by brunettes. These flower hair pins are sometimes quite elaborate, being made to represent a spray of flowers and foliage. Jeweled crescents, horseshoes, arrow heads and butterflies continue to be favorite designs for hair ornaments.

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FASHIONABLE brooches, are, many of them, composed of colored stones such as, canary, pink, brown and other colored diamonds, pink and gray pearls, opals and sapphires. These gem-set brooches come in round shapes, ovals, square crosses or other compact form. Almost all of the gem brooches are finished so as to serve equally well as pendants. Miniature paintings on iron, in a framework of gold, silver or gems, afford an artistic style of brooches, that contrives to please fastidious patrons. In this connection it may be well to notice the fact that these miniature paintings are also being adopted as earrings.

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WATCHES are again worn by the fashionable folk, not only as a convenience, but an ornament. It is the correct style to wear watches with Directoire dresses. In England some ladies are going to the extreme of an exact revival of olden times, by wearing a large old-fashioned watch fastened at one side, with a piece of watered silk golon hanging from it, and tied in a bow at the end (about 12 inches long), with a watch key and old-fashioned seals attached. The possessors of watches of bygone date (veritable antiques) are the ones, of course, who revived this fashion of wearing watches hung from the

watered silk ribbon in the old fob style. Fobs are kept by the fashionable jewelers, with the hook and swivel, the watered ribbon being about one inch wide and six inches in length.

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IN New York ladies are wearing with their Directoire and Regence gowns, watches hung from chatelaines. These chatelaine watches are, many of them, extremely ornate. Some are in gold cases and some in silver and steel. The ornamentation is varied; gems, enameling, inlaying, etching and chasing are all more or less employed in the decorations.

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THERE are large watches, medium watches and small watches, the latter being most popular just now. Forms vary; some of the watches are round, some flat, some oblong, while others are quite irregular in shape.

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THE London manufacturers are responsible for the present fad of tiny dials set in card cases, purses, the handles of whips and crosses and in bracelets. These diminutive time pieces can hardly be depended upon to keep a very exact note of passing minutes and seconds, but they bring a change of style into the feminine world and give our jewelers additional work to do.

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THE watch bracelets have gained, perhaps, after the chatelaine watches, the most popularity, and some of them are really quite attractive in appearance. A novelty in this direction is the new screw bracelet designed to hold an ordinary watch without increasing the size, by an extra case. Another new bracelet is a cable of gold joined together by a circular watch enriched with brilliants and colored stones.

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CHATELAINES, it need hardly be told, harmonize in material, style and decoration, with the watches. Some are of gold in pierced work, some are beautifully enameled, some are decorated in fine niello work and others are chased. A very pretty one seen was a combination of Indian filigree gold and colored enamel. There are also very attractive chatelaines in Russian silver, and in polished steel.

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It is equally fashionable to wear the watch with a queen chain, and there is no end to the conceits employed as pendants to these chains. Locketts are much favored as pendants and a new-comer of promise in this direction is fluted, with a brilliant set in the center. Little gold wire baskets, satchels, cotton-bales, vinagrettes, buckets, fans and other realistic designs, add to the list of queen pendants. The ball pendants continue popular, especially, richly chased and enameled ones. Glove buttoners also figure as pendants to watch chains.

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AND now comes the news that long pendant earrings are being revived in the gay French capital; whether these will again gain a permanent place in the world of fashion, remains to be seen. Hoop and crescent earrings, are both more or less worn here: the favorite styles are filigree gold and diamonds in slender settings. A rather attractive combination of ear-screw and earring seen recently consisted of a medium sized diamond mounted in a screw, with a tiny

filigree gold crescent set with small diamonds, swinging by a slender chain from it, after the fashion of a pendant.

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THERE are a great number of new brooches. A popular style of brooch is the one showing two rings interlaced. These rings are sometimes of frosted gold, sometimes enameled, and not unfrequently set with small colored stones. A beautiful and expensive brooch in this design is composed of a ring of diamonds interlaced with one of richly chased gold.

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BRACELETS and bangles remain as fashionable as ever, and it would be a difficult matter to state what styles are not in fashion, so widely diversified are the accepted designs in these ornaments. Link bracelets of oxidized silver set with colored stones, are popular. A broad band of Roman gold, with a row of forget-me-nots running through the center, is an attractive bracelet. A heavy coil of gold or silver rope, enameled in variegated colors, is another style. Bracelets formed of circular medallions of gold with a diamond in the center of each medallion, furnishes a handsome bracelet. There are many bracelets almost as slender as bangles, with the decoration in a cluster at the top. Bangles are worn in great numbers, and it is again admissible that these appear over long-wristed gloves.

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FOR full dress occasions are provided exceedingly costly and effective hair ornaments in form of aigrettes. A superb aigrette seen recently consisted of an aigrette of brilliants, spreading out from a diamond crescent and star. The piece representing the crescent and star was made so it could be detached and worn as a brooch or pendant.

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A NECKLACE may be a mere thread of gold from which hangs a handsome pendant, or it may be an exceedingly ornate and costly affair scintillating with gems. A fine gold necklet seen, had pearl pendants dropping from it at intervals of about one inch apart. Three or four rows of pearls fastened with a simple silver clasp, represent a fashionable neck ornament for young ladies. A very charming necklace consists of small clusters of pearls connected by little gold links.

ELSIE BEE.

Patent Law of Switzerland.

(The following translation has been supplied by Messrs. W. P. Thompson & Co., International Patent Agents, Liverpool and London, for publication.)

DECREE of the Federal Council concerning the proof of the existence of models* to be furnished for the obtaining of patents of invention, October 26, 1888.

The Swiss Federal Council, in execution of Article 14, sections 3 and 15, of the federal law of June 29, 1888, concerning patents of invention, and of Article 9 of the regulation for carrying it out, of October 12, 1888, upon the proposition of the federal department, of foreign affairs (commerce division), decree.

Article 1. The proof of the existence of a model shall be made—
(a) for models of which the permanent deposit is obligatory by

the handing of the model to the federal bureau of intellectual property.

(b) for models of which the permanent deposit is not obligatory, by the presentation of the model or of a photographic reproduction of the same to the federal bureau in view of its official comparison with the written documents accompanying the demand for a patent. For this last category of models the federal bureau can dispense with the presentation, even to the bureau. In this case it will be held equivalent—the presentation of the model to an expert of the federal bureau in another locality.

Art. 2. The permanent deposit of the models will be obligatory—

(a) for inventions concerning the movements and cases of watches,

(b) for inventions in the domain of portable firearms.

The ownership of those models, of which the permanent deposit is obligatory, will be acquired by the confederation.

The Federal Council reserves to itself the power to decide eventually after further experience for what other kinds of invention the permanent deposit of models will be obligatory.

Art. 3. The models or photographic reproductions which are not handed in personally by the applicant or his attorney must be accompanied by a letter of advice containing the following particulars: the name and exact address of the applicant; the name and address of his attorney; the title of the invention to which the model relates; the number of the provisional patent when there is one; the title and number of the original patent when it (the model) is for a patent of addition.

Art. 4. The federal bureau shall proceed to the comparison mentioned in Article 1 (b) by means of its agents, and eventually with the aid of an expert. The comparison shall extend to the examination of the concordance between the articles deposited and the written description of the invention to the extent of its essential characteristics.

When photographs will serve for the purpose, it will be necessary to find out if they have been taken from nature (not from a drawing). A written report in duplicate will be drawn up of the results of the examination, of which one copy will remain annexed to the papers of the patent and the other will be transmitted to the applicant. If the concordance appear incomplete or doubts are raised in regard to the basis which has served for the photographic reproduction, the question of the existence of the model will have to be resolved negatively under reserve in case of appeal to the decision of a superior authority.

Art. 5. If the question of the existence of the model is decided in the negative by the federal bureau, the applicant will have the right during a period of three months from the date when the communication of the decision shall have been made to him to appeal to the federal department, of which the federal bureau is a part. With the help of experts and after the examination of the actual model the department will decide definitely. The appeal will nevertheless not be allowed unless a sufficient guarantee of payment of costs which will have resulted shall have been furnished before the expiration of a period of three months. (See Art. 7.)

Art. 6. The comparison will take place, as a general rule, in the offices of the federal bureau. Exceptions can always be authorized by the official. If required, the applicants must arrange for the unpacking and eventual repacking to be done by a representative. The officials will not incur any responsibility of making good any damage that may be caused to models under their examination. These models must be taken away from the offices where they have been deposited at latest within eight days following the definite decision touching the question of the existence of the model; otherwise the federal bureau can dispose of them as it sees fit.

Art. 7. The costs of the operation will be at the charge of the applicant. He must assure the payment of the same by furnishing in advance a sufficient guarantee. The federal bureau will collect a tax of ten francs for the comparisons to which it will proceed. When the comparisons shall take place outside there will be, besides, costs

* According to Article 14, section 3, of the law, it is considered as a model, an execution of the invention, or a plastic representation clearly showing the nature of the object of said invention.

of displacement and of payments to experts upon the basis of the decree of November 25, 1878. The expenses of experts in (the court of) the second instance will be determined by the department.

Art. 8. It will be considered as the date when the proof of the existence of the model shall have been made in the sense of Article 18 of the regulations for the execution of the law of October 12, 1888, the day when the applicant shall have accomplished all the conditions required for the deposit of the model at the federal bureau or the comparison by the same.

Art. 9. When an appeal shall have been decided in favor of the applicant, Article 8 shall only apply, provided that the model shall not have been altered in any way during the course of the litigation. In the contrary case it shall be considered as the date of proof of the existence of model—the day when the model shall have been submitted to the expert investigation of the (tribunal of) second instance, whether in the office of the federal bureau or elsewhere—eventually the day when the guarantee of the payment of the costs of the appeal shall have been furnished.

Berne, October 26, 1888.

In the name of the Swiss Federal Council:

The President of the Federation,

The Chancellor of the Confederation,

HERTENSTEIN.

RINGIER.



[FROM OUR SPECIAL CORRESPONDENT.]

LOCAL POLITICS AND THIEVES DISTRACT THE BOSTON JEWELERS.

BOSTON, December 17, 1888.

The city has just passed through its annual crisis of a mayoralty election, and everyone is breathing easier. It was a peculiar contest in more respects than one, and the conservative business men were anxious because of the partisan and sectarian bitterness aroused. Now that it has been definitely settled that there shall be a general upheaval and transfer of authority at City Hall and in the School Board, the community has turned its attention to the more agreeable issues of the Christmas holidays.

The Boston Jewelers' Club held a social session at the Parker House recently. There were twenty members of the organization present, with Messrs. Daniel Morris and Henry T. Salisbury as invited guests. The older dealers hereabouts will remember them both as years-ago associates of D. C. Percival. Indeed, the firm name of Percival & Morris is not yet forgotten. The junior member is now an extensive manufacturer of pianos. Mr. Salisbury is located at Providence. Of course everyone had a good time.

The Shreve, Crump & Low Co. are exhibiting the magnificent prize offered by Commodore William H. Weld for forty-foot yachts. It is a solid silver tankard, after Mr. Weld's own design, and made by the Whiting Manufacturing Co., of New York. It measures eight inches in height, ten inches in diameter, with three handles.

N. G. Wood & Sons have displayed a well-preserved campaign flag, used in the Tippecanoe campaign of 1840. On it is inscribed the legend: "Harrison and Reform." The relic has been in the Wood family for more than a score of years.

The plaintiff came off victorious in the action to recover on a note brought by John Federhen, jeweler, against J. Negrine. The defence offered a general denial of the genuineness of the signature. The verdict was for \$1,552.43.

Frederick Oberhauser, son of Mrs. Martin Oberhauser, who runs

a cutlery and silverware establishment at 17 Water street, was married recently to Miss Caroline M. Fachon.

The Church Home for orphans and destitute children at Tapsfield, Mass., has been made happy by Joseph E. Stanwood, long connected with Shreve, Crump & Low. Mr. Stanwood's residence is at Tapsfield, and he has given his great house there, with twenty-five acres of land, to the charitable institution mentioned. The donor owns several patent invention rights, and has already passed the three-score milestone of life. He is living just now in New York with his wife and three children, and the mansion will not be occupied by the Home until spring. All the tools go with the farm, which is valued at \$20,000.

Abram Heilbron, who does business at 1705 Washington street, has gone west and let half his store to Frederick H. Horle, watch-maker and jeweler.

There have been two or three peculiar cases of swindling in the past month. On a certain Friday evening a young fellow called at M. Meyers', 32 Merrimac street, to look at some silver watches. He haggled a good deal about the price, and suddenly darted through the door with a couple of timepieces in his hand. Mr. Meyers isn't a professional sprinter, but he got there just the same, captured the thief and lugged him to the station. Three months in the House of Correction was the penalty imposed.

Another case is that of William A. McDonald, an employee of William Read & Son, 107 Washington street. The firm has been missing articles from the stock for a long time, and it wasn't till the middle of November that the Police Inspector caught McDonald at his tricks. He confessed to a systematic scheme of robbery, involving property valued at \$500. A number of opera glasses were found in the pawn shops. The culprit was held in \$500 for appearance on the 14th inst.

Lewis Meyers, pawnbroker and watch dealer, was awakened one morning by burglars attempting to force an entrance to his room. They had climbed up a rear fire escape, but were frightened away by a burglar alarm.

The creditors of Thos. B. Bragan, jeweler, met for the second time at the Insolvency Court on December 7. A third meeting is called for April 2, at 10 o'clock.

Charles A. White is President, and George B. Fessenden, Treasurer of the new Eco-Magnetic Company which has been incorporated under the Maine laws, with a capital of \$200,000, with headquarters at 105 Summer street, Boston. The concern makes a specialty of manufacturing electric watchmen's registers on an improved pattern, and reports excellent prospects.

The death of Seth W. Hale, President of the Jewelers' Circular Publishing Company, caused much sorrow in Boston. He has long been known and recognized here as one of the most enterprising and able defenders of the trade's best interests.

An odd robbery occurred at the store of Simon Lewis, on Kneeland street. A well-dressed woman entered towards evening and engaged the attention of the proprietor's daughter, while a male accomplice broke the window and seized two diamond rings, worth \$165. He had previously fastened the door on the outside so that pursuit was impossible.

Kattelle Brothers, No. 95 Court street, have also been victimized. A slouchily dressed man called for some silver watches one forenoon and skipped for the street with the first one shown him. When caught the watch was found on him and he got six months in the House of Correction.

Geo. Jensen, the last of the trio of burglars wanted for the Maynard noon-day robbery, has been captured. He was arrested originally on Labor Day, but took advantage of a peculiar similarity between his own name and that of a man named Johnson who appeared in court for drunkenness. Jensen stepped boldly up, paid Johnson's fine and lit out. His escape and evasion of the inspectors

ever since were worthy of the big heads who did up the Brattle street jewelry store.

J. B. Hart, the Tremont street auctioneer, displays some antique silverware claimed to have been brought from Constantinople by Iskender Bey, of the Sultan's palace.

Mr. and Mrs. W. H. Kennard have been visiting friends in Auburn.

A new National Trade Assembly has been formed in this city. Delegates from the entire watch case making trade of the country attended the organization meeting at Park Hall, on Nov. 14. The roll-call showed representatives from local bodies in Toronto, Newport, Montreal, Philadelphia, Chicago, Baltimore, Kentucky, Sag Harbor, Harrisburg, New York, Brooklyn and Boston, fifty delegates in all. Edwin S. Blaine, State Secretary-Treasurer of the K. of L. acted as installing officer. A board of officers was chosen and standing committees appointed, whose main object will for the present be the securing of shorter hours of labor and increased wages.

Several hundred dollars' worth of silverware, French clocks and bronzes, were stolen from B. A. Atkinson & Co., installment dealers, by Benjamin Leach, one of their trusted clerks. His trial will come in the Superior Court.

Chas. O. Hunter, watchmaker at No. 542 Washington street, has given a chattel mortgage for \$200.

The customs department has decided that spectacles with metallic frames, which are not gilt, but merely washed with silver, are dutiable at the rate of 45 per cent. ad valorem, as manufactures of metal and glass.

Nathaniel Watson Howard, of the firm of Howard & Williams, gold chain manufacturers on Hillman street, Springfield, Mass., died at his Union street home on November 11, from brain congestion.

Harrington & Freeman have been regarnishing their retail establishment at No. 59 Court street.

Palmer, Bachelder & Co.'s lease of the estate at No. 146 Tremont street, expires in January. They are advertising great reductions in prices to close out their extensive stock.

Chas. E. Davis, jewelry dealer at No. 7 Hanover street, filed a voluntary insolvency petition on the 6th inst. Liabilities, \$4,750, of which \$75 is secured by \$200 worth of hypothecated stock; \$1,200 in stock and fixtures, \$100 in Somerville real estate and \$2,500 in law suit interests, represent the nominally unencumbered assets.

A new bid for holiday patronage has been made by Foster & Emerson, at No. 409 Washington street. The partners are Willis B. Foster and Chas. W. Emerson, who were both formerly in the employ of the H. A. Prentice Co.

Geo. E. Homer has changed his place of business from No. 45 Winter street to No. 112 Tremont. The new establishment is 80x25 feet and has been elaborately stocked.

LEON.

elegant patterns in some lines will be seen than ever before. Business during the past year has on the average been very fair, but of a very conservative kind and few failures have occurred amongst the jobbing trade. The manufacturers have held together very well the amount of business which some have been favored with, but changes may be noted later on. Collections have been up to the usual average for a presidential year. The many readers of THE CIRCULAR here are pained to learn of the death of our late esteemed president, Mr. Seth W. Hale.

Mr. Charles Downs has fully recovered from his late indisposition and is around again as well as ever.

Mr. Edward Holbrook, Treasurer of the Gorham Manufacturing Co., with his family, has been stopping at the Narragansett Hotel during the past week. Mr. Holbrook makes a very efficient and popular officer as Treasurer of the Gorham Co.

Messrs. Kent & Stanley find that their new quarters in the "Enterprise Building" are none too large to accommodate their constantly growing business, as they now employ 125 hands.

Col. Theo. A. Barton, of the Gorham Manufacturing Co., attended a banquet of the Gen. A. B. Lawton Camp, Sons of Veterans, at Newport recently.

Messrs. Ostby & Barton, the popular ring manufacturers, of Clifford street, have all they can possibly attend to, in the way of orders for their popular goods.

The new building which is being erected by Messrs. S. B. Champin & Sons, at the corner of Chestnut and Clifford streets, is fast approaching completion. The walls are all up and the roof is fast being put on, and the whole structure will be ready for occupancy early in the Spring. It will furnish some well-lighted and pleasant shops.

At a meeting of the Directors of the Manufacturing Jewelers Board of Trade, held on Saturday, November 24, Mr. Fred. I. Marcy tendered his resignation and was succeeded by Mr. Wm. R. Dutemple, who was elected to fill the vacancy of Vice-President.

Messrs. Fessenden & Co., silverware manufacturers, report business very good for the season of the year.

The following named jewelers were noticed at the meeting of the Commercial Club, held on November 17, at the Narragansett Hotel: Messrs. H. F. Richards and Col. Isaac M. Potter.

At the Republican convention held in this city on Friday, November 23, the following jewelers were noticed: Messrs. John M. Buffinton, A. A. Wightman, John F. P. Lawton and Thomas F. Arnold.

Messrs. Jones & Spencer's establishment at the corner of Mathewson and Westminster streets attracted considerable attention on account of the great display of jewelry they made for the holidays.

Mr. M. L. Read, of No. 118 Derrance street, has his line of samples ready for the Spring trade.

The Burdon Seamless Wire Co. has removed from No. 66 Stewart street to their new factory at No. 109 Summer street.

The Revere Manufacturing Co. has started in the jewelry business at No. 409 Pine street.

Mr. H. C. Stillwell has been admitted as a partner by Mr. John Moore, and the style of the firm name will be John Moore & Co., at the old stand.

The Jewelers' reception, held in the Infantry Hall, on December 7 and 8, by the Young Men's Christian Association, was a decided success. Besides the musical and athletic entertainment, there was a large exhibit of jewelry, silverware and precious stones by the following named firms: The Gorham Manufacturing Co., R. A. Kipling, Foster & Bailey, Brown & Dorchester, Geo. L. Vose & Co., C. F. Irons, Chas. Downs & Co., Wm. F. Fisher & Co.

Mr. J. R. Doolittle has removed from No. 264 to 260 Westminster street.

Messrs. A. Holt & Co. have sent a petition to the Municipal Court in regard to appointing an administrator to settle the estate of the late Walter B. Randall.

Col. Isaac L. Goff, who met with the accident which caused the



[FROM OUR SPECIAL CORRESPONDENT.]

THE BUSTLE OF PREPARATION IN THE EAST.

PROVIDENCE, R. I., December 24, 1888.

THE CIRCULAR extends to its many readers the compliments of the season, and trusts that the year 1889 may fully come up to their expectations, and that the amount of business transacted may far exceed anything in the memory of the oldest manufacturer. The past month or six weeks have been devoted to getting up new designs for the coming Spring trade and the result will be that more new and

breaking of his arm, is about again and the injured member is fast mending.

Messrs. Fred. I. Marcy & Co. have again started up their works on orders which have been received during the past few weeks while they were closed. The proposition of the concern to pay 20 per cent. cash on April 1 next, is looked upon quite favorably by a majority of the creditors, and may possibly be accepted.

Mr. Barton A. Ballou has accepted the position of director of the Jewelers' Board of Trade.

The members of the Manufacturing Jewelers' Board of Trade have decided to accept a settlement of the affairs of J. M. Chandler on a basis of 40 per cent., 25 per cent. cash and the balance on time, as being the best that could be effected.

Members of the Board of Trade represented in the City Government for the coming municipal year are Messrs. E. Lowe, Alderman, and H. S. Dorchester and Silas Manchester, as Councilmen.

Mr. A. J. Linton, who was closed out in October last, has again started in business at 119 Orange street.

Mr. L. M. Kelley has been attached by William H. Hall & Son, of New Haven, for the sum of \$81.80.

Mr. Hoffman S. Dorchester has been elected as Treasurer of the Committee of Plumed Knights having in charge the excursion of the Knights to Washington to attend the inauguration of President-elect Harrison in March next.

On December 4 the Willets Manufacturing Co., composed of S. T. Willets, President, and Charles Benson, Manager, manufacturers of jewelers' machinery and tools, at 55 and 57 Clifford street, was dissolved, both parties signing in liquidation. The business was reorganized on the same day by Messrs. Willets, Benson and others as the Willets Machine Co.

Mr. C. Anthony Fowler, of Messrs. Fowler Bros., has been stopping at the Narragansett Hotel for the past week or ten days superintending the getting out of samples for the spring trade. The line will be fully up to the standard maintained by this firm.

Messrs. Hutchison & Huestis, the solid gold ring manufacturers of Eddy street, have been pushed with heavy orders for their standard goods the past month, and their new line of samples for the coming spring trade still show many models of beauty in the way of new designs for rings.

Mr. Charles F. Irons, manufacturer of gold emblems at 102 Friendship street, has issued to the trade a finely illustrated catalogue, which leads anything in that line that has been seen for a long time.

Messrs. Godfrey & Adams are always *qui vive* to furnish anything new that the trade calls for, as is shown by the "Latest," which is having a decidedly good run, and fairly outdoes their celebrated "Automatic."

Mr. Morris Newwitter, of the firm of Newwitter & Rosenheim, has been stopping at the Narragansett Hotel the past week while looking over the samples of the leading makers.

Messrs. Atwood & Colwell report business to be very good with them in the chain line, sales being constantly on the increase.

Messrs. John L. and J. L. A. Fowler left for New York on Saturday, the 22d ultimo, to be at home on their mother's seventieth birthday, Monday, December 24.

FAIRFAX.

Oil Adhering to Pivots.

A HIGH or projecting finish, flat pivots, and the inside and outside turned at an acute angle, make the oil adhere better and prevent it from running out. In a case where the holes are wrinkled there is more room for the oil, and it is, therefore, more rapidly decomposed.

The smaller the pivot the less is it affected by changes in the oil, and, consequently, the less will it vary in its working in various posi-

tions. Pivots, however, should never be made so fine that their solidity will be lessened.

The next question which arises is: What is the best shape for pivots that turn on cap jewels? The cylindrical; but the bearing should be conical. Not only does this shape give more solidity, and pivots with rectangular bearing are always more liable to break than the former, but the conical pivots can always be made shorter, and consequently finer. They also present less surface for capillary attraction, and there is less likelihood of the oil running from the pivot hole. Capillarity is the property which all liquid bodies have of adhering to the sides of vessels at a greater elevation than their own surface. When a capillary tube is inserted in a vessel containing any liquid, the liquid will rise in the tube to a certain height, and the smaller the tube the higher it will ascend. Oil possesses this capillarity in a marked degree, and readily settles in the depressions beside the pivot holes. If the rectangular bearing enters the hole jewels horizontally, the oil adheres more firmly than if the bearing were hollow turned.



[FROM OUR SPECIAL CORRESPONDENT.]

THE GIFT CRAZE AT ITS HEIGHT—"KINDRED" LINES SWELL THE JEWELER'S STOCK—SOME OF THE SEASON'S NOVELTIES.

LONDON, December 7, 1888.

A prominent characteristic of our country and of our time is the custom we have of marking particular seasons and important events by presentations. We have New Year's cards and gifts, tokens of regard and of affection on St. Valentine's Day, Easter cards and gifts, and Christmas cards and presents. When we are apprised of an intended marriage, we are expected to give a wedding present; if the happy couple honor us by naming their child after us we are expected to make the infant a present. It is the correct thing to send every one of our friends a birthday card and the more intimate of them a small present as well. If, being residents of the country, we go to visit our relatives in the city, we always take with us presents of fruit or flowers, or some special product of our locality, and if, being residents of London, we go on a visit to our friends in the provinces, we think it only right to take the ladies of our acquaintance some specimens of the latest fashions—either in gloves or sashes or fans, or ornaments for personal use.

The gifts may be costly or of little intrinsic value, but they are very extensively made in almost every position of life. (It is instructive to observe the manner in which such presents are received and appreciated, and it is possible to form pretty accurate estimates of character from such reception and appreciation. The real extent of the latter is often easily ascertained by the care or the negligence bestowed on the preservation of the gifts.) Of all the seasons or circumstances which lend themselves conspicuously to the making of presents, Christmas time finds the most favor, and of all the trades which are actively engaged in the production of such presents the jewelry and kindred trades take the first place. From a pretty close inspection of a large number of our warehouses and retail shops, I must say that the "kindred trades" are this season rather more to the front than the jewelry trade proper. Whether our retailers (storekeepers, I think, you call them) have rightly gauged the public taste or not I should not like to say, but it is very certain that they have laid in a very good assortment of articles specially intended for presents that are not jewelry in any sense of that now very elastic

term. Such articles as ornamental cases for correspondence, ink-stands in the form of a cockatoo, made of real feathers and mounted on bronze stands, small ornamental bronzes, consisting of birds, dogs, gnomes, cats, etc., painted in their natural colors, photograph frames, reading stands, portrait boxes, etc., are scarcely jewelry, yet these and similar goods are now found in many jewelers' stocks.

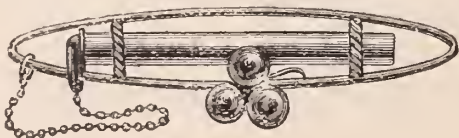
There cannot be any doubt that the business done in these is now improved and improving. There is a more encouraging tone throughout the trade, and we all feel that the load of depression is gradually but surely passing away. One of the surest indications of improvement is found in the fact that bullion dealers have been very busy



just lately. The state of trade for some time past has been such that manufacturers have not purchased either gold or silver, except for the execution of orders. We may therefore feel sure that orders have been plentiful. Silversmiths have been producing more novelties than usual, even at this season. Indeed, one of the prominent features of our trade now is the almost unprecedented rage for novelties. The dealers are fully alive to this popular taste, and thus they spare no time in going around to the various factories to see the latest before they decide to order. Notwithstanding the natural desire to deal with the firms they have known longest and best,



retailers will buy the latest novelties whether produced by friends or strangers. A factor (jobber) who in calling upon his retail customer cannot show some novelties, need not trouble himself to show his samples at all. But a man who can show one or two taking and original productions may not only count upon having orders for them, but stands a good chance of orders for regular goods in addition. Even timepieces have had to fall in with the prevailing fancy, and they are now found in every variety of position. A very ingenious arrangement is that of a stand, formed of a pair of real horns, nicely mounted in silver and fitted on to a base of polished oak,

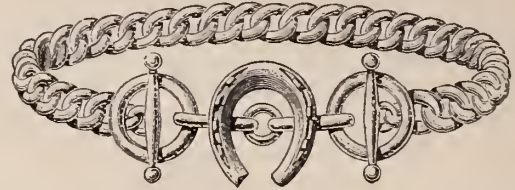


ornamented with silver. There is a demand for ladies' watches no larger than buttons; they are rather thick and in heavy cases. This taste, no doubt, is the result of the rage for watch wristlets. I cannot say that either fancy is a very sensible one. I have just seen a very pretty novelty in the shape of a Bellows Clock. This, as will be seen from the illustration, represents a pair of drawing room bellows. The dial is enamelled with blue and black letters, the case—or frame-work, rather—is of satin wood, and the filling in is of red morocco. It is a pretty drawing room ornament, and possesses this great advantage, that it can be suspended in many situations in a

room and with good taste, where any other form of timepiece would be inadmissible.

I have seen some very pleasing designs in gold and silver bracelets and bangles. The bracelet and pencil combination I think I mentioned a few months ago, but there are now different applications of the same idea and some great improvements in the original application. The pencil bangle is very well got up and fully answers its dual purpose. The sketch needs no verbal explanation.

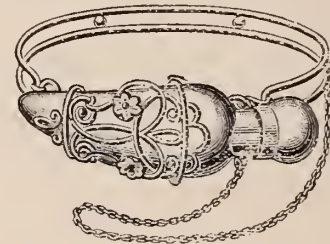
I have seen to-day upward of fifty different patterns, but the most



attractive of all was a very fine gold flexible bracelet, which is herewith illustrated

A really handsome present is a combination of scent bottle and bangle in fine gold. I cannot but question the taste of such a combination, but the article I saw was well executed and of course, as a present, had a substantial intrinsic value, which all presents have not.

I have been looking at gold and silver brooches until I am not able to give a very clear account of any of them. The "unconventionalities" this season are very numerous. Many of them are strikingly original, but that was their only attraction for me. One, however, was very effective—"The Bullrush." It was a beautiful



specimen of fine gold work set with real pearls. It impressed me as being one of the few that had any claim to be described as works of art.

There are indications that as far as our trades are concerned we shall commence the new Year with bright prospects. I hope it will be the same with you and that in the old country and the new these hopes will be more than realized.

VIGILANT.



President, HENRY HAYES.....Of Wheeler, Parsons & Hayes,
First Vice-President, JOSEPH B. BOWDEN.....Of J. B. Bowden & Co.
Second Vice-President, CHARLES G. LEWIS.....Of Randel, Baremore & Billings.
Third Vice-President, JAMES P. SNOW.....Of G. & S. Owen & Co.
Fourth Vice-President, ROBERT A. JOHNSON.....Of Celluloid Enamel Co.
Secretary and Treasurer, WILLIAM L. SEXTON.....Of Sexton Bros. & Washburn.

EXECUTIVE COMMITTEE.

GEO. H. HOUGHTON.....With Gorham Mfg. Co.
WM. H. JENKS.....With Tiffany & Co.
A. A. JEANNOT.....Of Jeannot & Shiebler.
GEORGE R. HOWE.....Of Carter, Sloan & Co.
WM. BARDEL.....Of Heller & Bardel.
J. R. GREASON.....Of J. R. Greason & Co.

At the regular monthly meeting of the Executive Committee of the League, held on Friday evening, December 7, there were present

President Hayes, Vice-Presidents Johnson and Lewis, and Messrs. Howe, Greason, Jenks, Jeannot, Houghton and Sexton.

The election of advisory members of the Executive Committee was decided upon, notice of which will be sent to the members of the League previous to the annual meeting.

Three requests for change of beneficiary were received and granted.

The following applicants were admitted to membership:

Tom H. Hollister, of Chicago, Ill., proposed by O. W. Wallis and J. M. Parshall; James F. Lane, of Augusta, Me., proposed by Chas. M. Ballard and C. R. Whitten; Julius Dangerfield, of Belton, Texas, proposed by F. Henry Austin and J. G. Batte; Rembrandt E. Dakin, of Philadelphia, proposed by Eugene Ziebler and Chas. E. Dakin; Henry P. Lowell, of Augusta, Me., proposed by J. P. White and D. Webster, Jr.



* A Complete History of Watch and Clock Making in America.

[By CHAS. S. CROSSMAN.]

Number Twenty-nine.

Continued from page 78, December, 1888.

CHARLES FOSOLDT, OF ALBANY, NEW YORK,

Was born in Dresden, Saxony, February 23, 1819, and served his apprenticeship there. He came to America in 1848 with the intention of settling in one of the western states, but stopped *en route* at Rome, Oneida Co., N. Y., to see his brother and concluded to remain there. During the first winter he busied himself (with two assistants) in making the necessary tools and machinery for building tower clocks. In the following year he made an eight-day watch for Gen. Armstrong, which had two main-spring barrels and subsequently turned out several large regulators and a few pocket chronometers. During the following years he exhibited his work in Syracuse and Utica at the fairs held under the auspices of the Syracuse and the Utica Mechanics' Association, receiving four first-class premium medals and two diplomas. In 1850 he invented and patented the micrometer regulator (now known as the Howard regulator, the patent having been purchased by E. Howard & Co.), and his hair-spring stud and patent chronometer escapement, and began 150 movements. In 1861 he removed to Albany and continued the work and also made a number of astronomical clocks. In 1870 he constructed the first tower clock which had two movements, one for measuring time and the other for transferring the time to the dials and unlocking the striking work, a contrivance which was duly patented.

In 1873 he invented and patented a gravity escapement, and subsequently further improved and re-patented it again in 1875 and 1884. In 1875-76 he made a large Tower clock which he exhibited at the Centennial Exhibition, in Philadelphia, and in recognition of its superiority, received the prize medal of honor and diploma of merit over all other exhibitors of tower clocks. During the year 1870 his eyes were greatly affected as a result of a severe cold contracted while putting up the tower clock in Newburg, N. Y., which necessitated a suspension of work for a number of years. By 1878 his eyes were

again restored to their normal condition, and besides his horological work he gave some attention to microscopic work and began to rule lines on glass with a diamond, for which purpose he made several machines and worked until all obstacles, obstructive and interceptive to fine results were removed. He ruled up to 1,000,000 lines per inch. One of these plates ruled up to this fine standard was purchased by the United States Government. For this work the then existing microscopes were found to lack the necessary delicacy of construction. He was compelled to construct one more suitable for this work, which he did and patented it. All the articles mentioned he still manufactures, mostly to order and on his own patents.

FRRNK LEMAN

Was born in New York City, December 31, 1837. His father afterward became a jeweler in Worcester, Ohio, and the young man was apprenticed to him. He afterwards was employed for some time at the United States Armory at Springfield, Mass., where he remained until 1865, and then went to Marion, New Jersey, in the employ of the United States Watch Co. He was afterwards successively with the Mozart, the Elgin and the Rock Island watch companies, and finally returned to Elgin in 1871 to accept the position of designer and inventor of watch machinery. He has made several quite important inventions in automatic machinery. His dial-spring and hair-spring wire drawing machinery are also among the list of improved machinery.

Mr. Leman is quite modest about telling what he has done, but we can say that he stands in the front rank of the inventors of automatic machinery, who have put this industry where it stands to-day.

MR. JOSEPH DELPHIN, JR.,

Was for a number of years a watchmaker, doing business in School street, Boston, and in connection with his repair business made a few watches, commencing in 1871 and making five during the seven following years. They were all key wind, three-quarter plate, lever escapement and of the English style of escapement.

ALBERT H. POTTER, OF BOSTON,

Now a retail jeweler of that city, while with the Waltham Watch Co. and Messrs. E. Howard & Co., of Boston, made several watches with fancy escapements on the chronometer principle. Two of them particularly are really odd specimens of mechanical genius and horological skill. He used factory trains in some; and trains of his own construction in others.

ALBERT H. POTTER

Is probably known by reputation at least to most of our readers as the maker of the "Potter Watch," which he manufactures in Geneva, Switzerland; but we are to speak of him briefly as a maker of watches previous to his going abroad. He commenced his apprenticeship in 1852 with Messrs. Wood & Foley, of Albany, N. Y., where he remained three years. After this he went to New York City and established himself as a watch repairer at No. 19 John street, subsequently removing to No. 84 Nassau street, where he took up the making of watches. He made in all some thirty-five fine watch movements which he cased in gold, and sold at prices ranging from \$225 to \$350. Part of them were chronometer and part lever escapements nineteen and twenty line, key wind, gilt movements. A few were fusee, but mostly going barrels, both bridge and three-quarter plate. After remaining in New York five years and over he went to Cuba in 1861, where he carried on a very successful watch repairing business. While there he made two watches; one a quarter hour repeater, and the other a duplex escapement with some variations of his own. Both of them passed through the Chicago fire, and he keeps what was left of them as relics. He stayed in

Cuba five years then returned to New York City and worked out some ideas on escapements which he had, and one of which he patented. Later he went to Chicago, where in 1872 he established the business of Potter Brothers. In 1875 he left there to go to Switzerland to make the Potter Watch.

NORMAN GREENOUGH,

Was a native of Lebanon, New Hampshire, who when he reached manhood moved to Newburyport, Mass., and engaged in business as a watch repairer and maker of nautical instruments. He was a very skilful mechanic, a man of rare ingenuity, and left no superior behind him in this section. Some of the finest chronometer watches in use by railway conductors and others are his work. But his knowledge of mechanics was not confined to his immediate calling. It extended to other branches and on a broader plan. Though self-educated, he was a man of some scientific attainments, and was particularly devoted to the study of astronomy. To aid his astronomical investigations, he built an observatory in the rear of his house that was ninety feet above the level of the sea, in which he had an excellent telescope together with the maps and books necessary for his studies. He had several apprentices, one of whom Mr. John P. Adams, now of Boston, says of him: "He took a high place in the trade. He was a master genius. He invented an escapement of somewhat peculiar action, one feature being that it took its impulse from an intermediate lever which had for a propelling force a small spiral spring like a chronometer bascule spring. The lever being, of course, brought into position to give the impulse by the action of the scape wheel, the advantage claimed was equality of impulse." This would look feasible, but would not be always realized in function when the watch was turned in various positions. He made about fifteen pocket chronometers in all. The first ten he made himself all but chains and dials, not even excepting the balances. The first one Mr. Adams thinks was a marine chronometer, which he made a chain for, as the chronometer men in New York did not recognize him as a chronometer maker and refused to sell him any. He had mastered the principles of isochronism without instruction and could time them. He expected soon to be able to make a marine chronometer and send them to sea on short notice, but this was cut short by his sudden death in August 1866, in the forty-sixth year of his age. He did much that we might speak of as the outcome of his superior mechanical ability, but probably left as much undone which he was hoping to do had his life been prolonged a few years.

S. THACKARA.

For fear some one will say we have not spoken of all the projects in connection with watch manufacturing, we must not neglect to speak of this one, conceived in Newark, N. J., in 1878 which may be characterized as stillborn, never even receiving a name. Mr. William M. Force appears as the capitalist and Mr. S. Thackara as the mechanical man. Considerable machinery was commenced which was never completed, and, so far as we can learn, consigned to the junk dealer, and thus our readers are saved from reading another of these harrowing tales of horological misadventure.

HENRI FOUCY, DIAL MAKER,

Was born in Geneva, Switzerland, where he learned his trade of his father. He came to New York in 1856, and soon after went to Boston, finding employment in the American Watch factory, and remaining there until 1861, when he returned to New York, established a job shop at 12 John street, and made glass dials. He was there several years, and was the first man to make soft enamel dials in America, so far as we know. He returned to Waltham in 1871 and remained there until his death, in 1878.

AMERICAN BALANCE MAKING.

We speak of this particular branch of the industry because the methods now used have been almost entirely developed in America, and particularly by the late Mr. J. B. Gooding, for many years in charge of the balance room of the Waltham company.

The old method in vogue in England and adopted for a time by some of the American companies was to flow brass on a steel rod and then hammer until tempered and turn it off and saw off the blanks for balances, which were then cross-cut for the arms by hand.

Good balances could be made in this way, but the expense was too great for American watches. The first plan adopted by Mr. Gooding is described by him as follows: "The steel disc or blank was driven into a brass ring with pure silver foil between, and bits of arsenical solder was then dropped on to the joint, which had been previously covered with flux. The whole was then driven into an iron washer and fired. The loss on account of blow-holes and defective joints was enormous, but still I did not believe in melting the brass on the steel."

Mr. J. L. Keyser, the present foreman of the balance room at the Waltham factory, assisted him in further experiments, which resulted in the present method, viz., that of melting the high brass ring on to the steel blank, held in place by a capsule of low brass, which, of course, having more copper in it, does not fuse at the same temperature as the high brass. This was patented in 1874 by Mr. Gooding. Automatic machinery has also done as much to help balance making as any other part of watch making. Mr. Van Woerd's automatic drilling and tapping machine, with the help of one young man, does the work of at least five men in the old way of working.

There are in all nearly a hundred operations necessary to make a balance, but by the use of automatic machinery for nearly all operations the time of making them is reduced to the lowest possible minimum. A little time spent in the balance room of a watch factory is most instructive to those interested in this branch of the industry.

HENRY ABBOTT

Has come in for a share of popular favor in connection with his stem-wind attachments, which are applied to key-wind American watches. A few facts may not be out of place. The first form of it was patented June 30, 1876, and worked with a lever on the side of the bezel, like a swing key to a music box. In 1880 Mr. Abbott further improved the device, and remodeled it so as to wind by the crown, as now used. Mr. Abbott has established quite an extensive factory for the manufacture of this stem-wind device, and has now made and sold over 25,000 of them. He is also interested in other mechanical pursuits, one of which is an automatic type writer, of his invention. He is secretary of a company, which will soon put them on the market in large quantities.

JOHN LOGAN,

Who has obtained considerable celebrity in the watch trade as a spring maker, was born in Lowell, Mass., December 9, 1835. He was first apprenticed to a saddlemaker, at the age of fourteen. Later he was apprenticed to Jonathan Johnson, of Lowell, Mass., to learn the watchmaker's trade. Having finished his apprenticeship, he went to Waltham, and entered the watch factory in 1857, where he cut pinions for two years and then worked at making hair springs for three years. Mr. Logan then went into business in Milford, New York, where he remained a year and a half, and then, in 1863, went to Boston and entered the employ of Messrs. E. Howard & Co., remaining there until 1870. At the time Mr. Logan entered their employ they were using tempered hair springs obtained of James Bottom, who at that time was the only one who had succeeded in making them successfully. Mr. James Todd, who was also with the company at this time, had been experimenting, but had not met with real success. Mr. Logan's previous experience at Waltham,

together with Mr. Todd's experience in tempering, finally brought about the desired result, and Mr. Logan afterwards made all the springs the company used while he remained with them. In 1870 he went to Marion, N. J., to make hair springs for the United States Company, and remained there three years. In 1873 the firm of Hart, Logan & Co. were established at Newark for manufacturing watch machinery, cartridge shells, etc., but at the end of a year he found his profit and loss account on the wrong side, and returned to Waltham, entered the springing department at the factory and subsequently took charge of it. He remained here until 1877, when he established himself in his present business of spring maker, beginning in a small way at first, of course, in comparison with his present business, which extends to many other kinds of springs besides those used in watches. Probably what distinguished him most was the patenting of his Breguet spring, hardened and tempered in form. He has so perfected the process that the coil which composes the curve is wound on a block by a girl, and is as simple as the winding of the spring itself. Mr. Logan took pains to show and explain to the writer the whole *modus operandi*, and it may be of interest to some, so we give it briefly.

Three springs are wound into the box as usual, one, however, being longer than the other (or two of them being cut off) and the end extends outside after the box is closed. By this it will be seen that only one Breguet spring is made in a box of three, which is the number always wound in a box for tempering; after the box is closed as usual a form is placed on the top of the box, which fits in a groove in the edge of the box and is held in position by means of a very small steady pin. Around this form the end of the long wire just alluded to is wound and fastened, after which the whole is enclosed in a larger copper box ready for tempering. Some difficulties arise, however, one being that in order to have every spring the same number of coils and of equal strength the boxes must be gauged each time they are used.

The Waltham company take Mr. Logan's entire production of springs made under this patent, but he makes flat hair springs in larger quantities for several of the American companies. He is also largely interested in the manufacture of mainsprings. He commenced in 1877 in a small room, but now has a substantial two-story brick factory building adjoining his residence in the western part of the City of Waltham.

The Jewelers' Security Alliance.

President, DAVID C. DODD, JR.

First Vice-President, AUGUSTUS K. SLOAN.....Of Carter, Sloan & Co.

Second Vice-President, HENRY HAYES.....Of Wheeler, Parsons & Hayes.

Third Vice-President, DAVID UNTERMAYER.....Of Keller & Untermeyer.

Treasurer, W. C. KIMBALL.....Of Strange & Brother.

Secretary, GEO. H. HODENPYL.....Of Hodenpyl & Sons.

EXECUTIVE COMMITTEE.

J. B. BOWDEN, *Chairman*.....Of J. B. Bowden & Co.

C. G. ALFORD.....Of C. G. Alford & Co.

N. H. WHITE.....Of N. H. White.

CHAS. G. LEWIS.....Of Randel, Baremore & Billings.

F. KROEBER.....Of F. Kroeber Clock Co.

SILAS STUART.....Of Silas Stuart.

EXAMINING FINANCE COMMITTEE.

EDWARD SMITH.....Of Smith & Knapp.

A. JORALEMON.....Of A. Joralemon & Co.

For further information, Application Blanks for Membership, By-Laws, etc., Address
P. O. Box 3277. 170 Broadway, New York

At the regular monthly meeting of the Executive Committee, held at the Alliance office on the 14th inst., there were present Vice-Presidents Henry Hayes and David Untermeyer, J. B. Bowden, Chairman, N. H. White and Secretary Hodenpyl.

The following were admitted to membership: C. H. Tinkham, Music Hall Block, South Weymouth, Mass.; Chas. W. Rickarts, 124 N. Clinton street, Rochester, N. Y.; John J. Cluin, 54 Central street,

Lowell, Mass.; John L. Field, Pittsfield, Illinois; H. A. Kilgore, Lebanon, Kentucky. Admitted since last meeting: Nevin & Lysaght, 721 Felix street, St. Joseph, Mo.



[FROM OUR SPECIAL CORRESPONDENT.]

CHICAGO, Dec. 20, 1888.

A diligent series of observations yesterday failed to reveal the presence of one visiting retail jeweler. The out-of-town retailer is at home, where he should be, turning his stock into dollars and occasionally wiring duplicate orders for "sold outs."

These telegraphic orders are more numerous this year than since the memory of the oldest inhabitant and they are, of course, the natural consequence of the very cautious purchasing done earlier in the season. Many over-conservative dealers are wishing they had made a truer and more liberal estimate of their needs and are missing many profitable sales by reason of too great caution.

Taken altogether, however, the trade are fairly well supplied and this conservative spirit betokens good health financially and prompt pay in January.

The mail and telegraph are keeping all the jobbers out late o'nights and tempted some of them to break last Sabbath's stillness. Even the clock companies are patronizing the express offices liberally and over sixty packages of clocks were observed yesterday ready for expressage to as many jewelers, at the warerooms of the Waterbury Clock Company alone.

"Never saw anything like it," said Manager Peck; "these re-orders are rounding up the season so nicely that the total already exceeds December of last year."

The other clock companies report the same state of affairs; so do the western agencies of the silverware manufacturers and the jobbers of jewelry in general testify to the same effect.

Simpson, Hall, Miller & Co., are especially busy and so are the Gorham Manufacturing Company; the especial demand for sterling silver novelties, manicure articles, brushes and combs of Gorham manufacture, which has been so much greater this season than ever before, has well nigh depleted the stock in the Chicago branch and their January stock inventory will not require much time or paper.

The jobbers of jewelry are kept in a quandary in deciding to whom to ship goods on approval. It is the invariable practice of many retailers to order approval assortments just at this time; as a matter of fact the entire shipment goes on sale and the jobber gets back what remains after Christmas. It always returns in a less salable condition than when shipped, and frequently the wear and tear amounts to positive damage. These "on memo" consignments are a yearly annoyance to the jobbers, most of whom, while acquiescing in the retailer's demand, submit to what they term an imposition through fear of giving offense.

C. H. Knights & Co. have had their force at work every night for the past two weeks, and when asked his idea about Sunday work, Mr. Knights said that no rush of business could be great enough to induce him to repeat an experiment of Sunday work made by him some ten years ago. At no little inconvenience to himself and to favor a new customer who promised great things, Mr. Knights met him at his store one Sunday, opened up tray after tray of his stock, and effected the sale of \$36. He never saw his customer again and any investor can buy this unpaid claim for fifteen cents. Mr. Knights considers his \$36 lesson cheap at its cost.

C. H. Knights & Co. are among those who report the total of their

season's business as ahead of last year, and this is the general verdict with all wide-awake firms.

It will take a week or ten days for Chicago jewelers to rest up after this month's money-making, but by January 8th, they will all be in a mood to enjoy their annual banquet, which occurs at Kingsley's, on that date. Each hale fellow is then expected to dispose of ten or twelve dollars' worth of edibles and drinkables and 120 are expected to sit at the feast.

The collection department of the Jewelers' Association continues to increase in favor and usefulness. Since the organization of this department last summer, \$5,000 have been collected by the association direct and an equal amount has been paid to creditors direct through the association's influence. This may not seem a large amount until it is remembered that fully three-fourths of these accounts were considered lost.

Marquardt & Sons, of Des Moines, Ia., are among the recent additions to the association's membership and other jobbers in the north-west are contemplating availing themselves of the benefits certain to follow from this consolidation of interests. Prominent firms in Minneapolis, Kansas City and Milwaukee are among those knocking at the door.

Nearly every Chicago jobber is a member, and inasmuch as the Chicago association exchanges reports with the New York Jewelers' Board of Trade, it is but a question of a short time when all the leading jobbers of the country will be so thoroughly informed of the reliability of each retailer as to effectually cut off supplies from all those unworthy of confidence and credit.

This movement finds as much favor with Chicago's retail jewelers as with the jobbing trade, every one realizing that it aims to shut out dishonest competition. "No merchant intending to pay dollar for dollar can compete with one who contemplates failure and a compromising settlement," was an observation heard to-day.

With reference to last month's observations concerning M. Horwich, the Milwaukee avenue jeweler who disappeared after obtaining over \$3,000 worth of goods from a half-dozen of our leading jobbers, it can now be stated that the creditors will realize, perhaps, fifteen per cent. About \$1,000 worth of the goods were discovered in Frank's pawnbroker's shop on Clark street and a smaller portion at Indianapolis in the possession of Lipschitz, who was wont to act as Horwich's introducer and interpreter. It cost \$600 to redeem the goods pawned at Frank's. Lipschitz returned here with the officers without a requisition.

An attempt to rob Lapp & Flershem was made a fortnight since. An order was presented purporting to be from Pfeil, Williams & Bredt, a neighboring firm of jobbers, calling for the delivery of quite a quantity of goods to their store. Mr. Wolff, the salesman, had his suspicions aroused by the appearance of the one presenting the order, and sending to Pfeil, Williams & Bredt, learned that they knew nothing of it. The probable purpose was the intercepting of the goods while on their way to the supposed purchaser.

The Waltham Watch Company are at work on their four millionth watch. Americans are nothing if not time keepers.

Louis Schnette has reason to know that "misfortunes never come singly." When his brother died some weeks since he took charge of his jewelry store at 3007 State street and in a few days he came near following his brother by falling through a show window. His injuries from the broken glass are serious, but he will recover.

Spaulding & Co. are already fulfilling their promises in the display of a richer class of goods than Chicago has ever before contained. Mr. Spaulding has not been with us two months yet, but the whole appearance of the establishment has been changed and our wealthier classes realize that when the enterprise is fully matured the great establishment will rival any in the world.

All the cheap retailers are more busy than at this time last year and every one of them realizes that the present renaissance of jewelry gives a prosperous outlook into 1889.

A peacock whose entire plumage is composed of gems and jewels, is the appropriate cut used by the well-known Chicago jeweler of that name in his holiday advertisements. The unique cut was originated and designed by *The Chicago Herald*.

The Waterbury clock is not sold in either dry-goods or department stores here to the general satisfaction of our jewelers. Manager Peck steadfastly refuses to supply any trade conflicting with regular jewelers and it is an example well worthy of general imitation.

The various cigarette manufacturers are flooding this and neighboring cities with circulars offering clocks to cigarette buyers as a premium. These clocks, one of which was shown your observer a day or two since, would ordinarily retail at from \$15 to \$25. Perhaps this is done to offset the crusade against cigarettes recently inaugurated here.

President Carpenter of the Minneapolis Jewelry Co., was here early in the month. He was returning home from New Mexico, where, according to the gossip of Dame Rumor, he owns a gold mine or two.

Among other jewelers visiting Chicago during this month were Charles Basset, Kendallville, Ills.; E. J. Ingersoll, Carbondale, Ills.; Edholm & Akin, Omaha, Neb.; F. E. Davis, Wyoming, Ills.; W. W. Hunter, Bloomington, Ills.; William Kline, Frankfort, Ind.; T. W. Martin, Joliet, Ills.; Rice Morris, Linnens, Mo.; C. P. Sundbury, Negaunee, Mich.; C. R. Hansen, Savannah, Ills.; F. H. Huntley, Cadillac, Mich.; E. C. P. Shaw, La Grange, Ind.; Fleming Bros., Eau Claire, Wis.; C. F. Durfee, Davenport, Ia.; Mrs. T. Kircher, Davenport, Ia.; H. Linning, Peru, Ills.; H. A. Boley, Greencastle, Ind.; P. H. Wade, Lafayette, Ind.; S. Swenningsen, Austin, Minn.; J. Heffernen, Cascade, Ia.

THE CIRCULAR'S OBSERVER.

Obituary.

ALFRED S. POTTER,

Of the firm of Fanning & Potter, and one of the most prominent and highly respected jewelers of Providence, died of paralysis on Tuesday, December 11th, aged sixty years. Mr. Potter was stricken with the disease which caused his death at the Home Club, on Thanksgiving Eve, and never regained consciousness up to the hour of his death. He was born in Fishkill, N. Y., but moved to Providence at an early age. After receiving a good common school education, at the age of seventeen he apprenticed himself with the old firm of Mathewson & Allen, where he worked for several years. He subsequently worked for Swan Brothers, Woodbury & Curtis, Greene & Mauran and Peck & Barton. When twenty-eight years of age he formed a partnership with Joseph Fanning, under the firm name of Fanning & Potter, and this partnership existed without change for thirty-two years. Mr. Potter was a popular man and prominent in local politics, having represented his ward in the Common Council for seven years. He had been honored with the presidency of the New England Manufacturing Jewelers' Association, was a member of the Squantum Club and Warwick Club, and was a Mason and Odd Fellow. He leaves a widow and two children.

VIRGIL H. BLACKINTON.

Attleboro Falls has met with a sad loss during the past month. On Saturday night, Dec. 15, after a comparatively brief illness, Mr. V. H. Blackinton, a highly respected and well-known manufacturer of jewelry, died surrounded by his family. Mr. Blackinton started the manufacturing of jewelry in this part of the town in 1857, at which time he purchased an old school house and turned it into a shop. He began manufacturing a line of ladies' jet goods and to this class of the trade he was well known. He made additions to

his original quarters to accommodate his growing trade, but on Feb. 15, 1869, he was completely burned out. He immediately rebuilt and up to the time of his death continued the manufacture of this line of goods. He accumulated quite a property at one time, but a few years ago it is reported that by an unfortunate speculation he lost quite heavily, although his family will probably remain in good circumstances.



ATTLEBORO, Dec. 20, 1888.

The trade here is undergoing its annual holiday depression and many of the shops have already shut down for a week or two. Others are running on short time, while still others who are manufacturing novelties for the special holiday trade are very busy.

I know of one firm which in one forenoon this week received as many telegraphic orders as it would generally receive in ten days. But on the whole there is very little cause for complaint and hardly any is heard either from the manufacturer or employee. The season now closing has been a very successful one. It began early and has lasted unusually late. New as well as old firms have had about all they could comfortably handle. The old cry that the jewelry business is being overdone has been but little heard and it has come to be an acknowledged fact that those firms that have not had a large trade this season are the ones that have failed to put new and attractive samples before their customers. On the whole January 1st will undoubtedly find the Attleboro jewelers, after squaring up the year's accounts, able to show a fairly good margin of profit.

ATTLEBORO.

In this part of the jewelry center the different firms have been generally keeping along in the even tenor of their way. Orders have been very plentiful much to the satisfaction of owner and workman.

The dissolution of the firm of F. S. Draper & Co. was something of a surprise to the jewelers in town. The firm name is quite an old one, but ever since they located in Attleboro, about two years ago, it has been under the management of Miss A. J. Meader, a woman of much executive ability, who has run the establishment without any assistance from the outside. The firm ceased to exist Dec. 15, and it is understood that her ill health is the cause.

Marsh & Bigney have as usual done a rushing business and from the fact that they have purchased the tools and machinery of the late firm of F. S. Draper & Co., it is possible that they contemplate enlarging in the immediate future.

J. M. Fisher & Co. make some of the handsomest charms to be seen in the market and it must be a pleasure for their salesman to show his sample case.

NORTH ATTLEBORO.

The manufacturers in this town make more in the novelty line of late years than formerly, and although what might be styled the "legitimate" trade is well supplied from here, yet within a few years many of the old firms have gone to making what they call "novelties." In some cases it is difficult to describe these fitly.

Bugbee & Niles have done a good holiday business. They make nothing but the very best of gold goods and their attractive patterns find a ready sale.

E. I. Franklin & Co., manufacturers of buttons, have done a splendid business thus far.

F. Mauser & Co. is a comparatively new firm who manufacture a full line of solid silver novelties and bric-a-brac. A local correspond-

ent of one of the smaller jewelry publications recently said that they were manufacturing plated ware and they at once felt the necessity or issuing a circular to the trade denying that they do any plated work at all. I have found it best to be careful what statements I make in this way.

On account of his important connection with the proposed new railroad through this town, Mr. T. I. Smith, of the widely known firm of T. I. Smith & Co., should receive more than a passing word in this correspondence. Theron Ide Smith was born in 1836, and during his early life received only a common school education. At the age of eighteen he entered the employ of Ira Richards & Co. and remained with them one year. He worked in several different shops till 1856 when on May 16 of that year he married Emily E., daughter of Abiel and Chloe Coddington. In June 1859 he started in business for himself with D. D. Coddington as partner, under the firm name of D. D. Coddington & Co. This continued one year when the firm went to Mansfield and shortly afterwards they were completely burned out. He from time to time formed a number of co-partnerships until in 1869, when he again associated himself with D. D. Coddington, under the firm name of T. I. Smith & Co., which is the firm to-day. Their specialty is bracelets, pins and charms. Mr. Smith is considered by his neighbors and friends as an intelligent and independent thinker. He is a Republican in politics, pleasant in conversation, unassuming and modest in demeanor and may be considered as one of North Attleboro's solid citizens. Of late years he has become quite deaf and at times it is quite difficult to carry on a conversation. His connection with the new railroad company has been in every sense a leader and if they are successful in their object much of the credit must be given to him.

1889.

Prospectus of the Optical Department.

By C. A. BUCKLIN, A. M. M. D., NEW YORK.



LETTERS ARE continually received from those interested in the study of practical optics, requesting advice as to the best book to study from. The books in the market have been carefully examined, and not one of them contain the necessary information sought after by a practical man in the optical trade. The difficulties which occur in the eye are quite thoroughly considered by all. Some are clear on one subject, some clear on another, and some are not clear on any subject. The technical details of lenses are completely ignored by all of them, which subject is of primary and great importance to any one desiring to experiment with lenses. The answer to these many enquiries is, therefore, the book which fully meets the requirements of one anxious to learn the nature and use of lenses in the correction of visual defects. I find it necessary to take all the points given in any fine text books before I encounter all the practical suggestions necessary to know on any one subject. I am at present engaged in writing a book which will fully meet all the requirements of practical men. The aim is to explain every possible subject in the clearest language with the fewest possible words. More space will be devoted to the consideration of the nature and peculiarities of lenses than was devoted to the entire subject in my former work, entitled, "Detection and Correction of Visual Imperfections." The above mentioned task being a

laborious and lengthy one, I propose commencing in the February number (under "copyright") a systematic course of instruction on optics which will be up to, if not ahead of, the times. The great trouble I encounter at present with those engaged in the optical trade is their sublime ignorance of the things they do not know. Not more than sixty per cent. of the individuals who apply to an optician require lenses with refractive values. The intelligent appreciation and explanation of the nature of their trouble by the optician gives him reputation which brings him business. The improvement in the general intelligence among the opticians in the United States since THE JEWELERS' CIRCULAR started the task of popularizing optics, has been refreshing. The immense increase of business done by large and small optical houses during the last eight years is very largely due to the work of this journal in making the subject popular among the small dealers in the smaller cities and rural districts.

It has been argued that the immense increase in the sale of optical goods during the past eight years has been a natural growth entirely, in answer to which I would say, the amount of optical goods sold during the last eight years has been almost double the amount sold during the sixteen previous years, when we leave out of consideration the consumption of those goods by that class who, from advanced age, are forced to use convex lenses because of complete inability to do work without them.

The department of optics in this journal is not only for the purpose of supplying scientific and practical articles for its readers. It will in the future contain a synopsis of any article appearing in foreign or domestic journals which has any special interest to the optician, and letters of enquiry on scientific subjects directed to THE JEWELERS' CIRCULAR will be published and answered under the optical department, providing they contain any practical question, the answering of which contains instruction of a practical nature.

School of Optics.—This little institution has been an outgrowth of the increasing demand for information of the readers of THE JEWELERS' CIRCULAR who have become interested in the subject, and convinced of the pecuniary benefit to be derived directly from a thoroughly practical knowledge of optics, and also the natural benefit which comes indirectly by the increased sale of jewelry, and the increased amount of watch repairing which comes as a result of the friends made during the process of adjusting lenses to the eyes of those who never before had been able to find lenses which produced comfortable vision. A thorough knowledge of optics protects those in the trade from one of the most annoying experiences, namely, the periodic visits of some traveling optician, who gains a reputation by fitting some cases which the local dealer could not satisfy because of his ignorance of the subject. Through the reputation thus gained, which he could never have enjoyed had the local dealer understood his business, the traveling optician gradually obtains control of the optical trade of the place.

The optical trade of any place will eventually be controlled by the one who can do the work best, providing he has no personal peculiarities which prevent him from doing the business; for example, an intemperate man, a chronic talker, a liar or one untidy in his personal appearance, will have much to overcome by his good work before gaining the confidence of the people.

A bright man, with two or more years' careful study, combined with a daily experience which illustrates practically what he learns by reading theoretically, can learn optics well enough to protect and control the optical trade of a given vicinity. By the method of object teaching and direct instruction given in the school of optics, he will make more progress in two weeks than he can by home study in two years. Once started with a clear idea of the subject, he can read easily technical literature which was very difficult for him to understand before he had received any instruction.

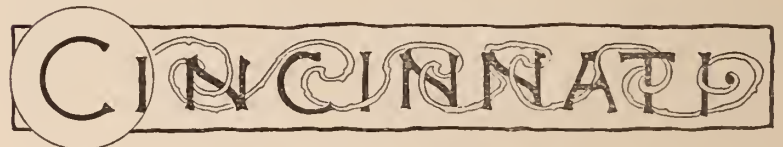
To illustrate the growth of "The School of Optics," which is the result of the popularization of optics by THE JEWELERS' CIRCULAR,

I attach a list of the graduates at work, and the towns occupied by them:

LIST OF GRADUATES.

George H. Applegate.....	Trenton, N. J.	M. G. Lowenstein.....	Hobart, N. Y.
Henry W. Appleton.....	New York	Harry P. Lowell.....	Augusta, Me.
Henry Aurnhammer.....	Newark, N. J.	Geo. H. Ludwig.....	Chambersburg, Pa.
E. H. Ayres.....	Elmira, N. Y.	John Marsh.....	Antwerp, N. Y.
Otis Bailey.....	Calais, Me.	N. A. Marshall.....	Rutland, Vt.
F. J. Barlow.....	Williamfton, Mich.	E. J. McKenzie.....	Montrose, Pa.
D. W. Barnum.....	Duluth, Iowa	M. McVey.....	Southbridge, Mass.
T. H. Bowen.....	Bridgeton, N. J.	Willis G. Mead.....	Salamanca, N. Y.
Frank A. Braddock.....	Medford, N. J.	A. E. Mellish.....	Ottawa, Kas.
L. C. Bradley.....	Cleveland, O.	G. W. Metcalf.....	Baltimore, Md.
Tremont Chapin.....	Onsida, N. Y.	I. W. Meyer.....	Waterbury, Ct.
Fred. F. Chase.....	Belfast, Me.	Robert Meyer.....	New York
David Clark.....	Reading, Pa.	Curtis J. Monson.....	New Haven, Conn.
T. D. Cloud.....	Washington, Ind.	August Morck, Jr.....	Warren, Pa.
E. E. Covell.....	Brockton, Mass.	T. J. Morrow.....	Holyoke, Mass.
C. M. Cushman.....	Burlington, N. H.	Chas. A. Muller.....	Bellefountain, O.
W. F. Cushman.....	New York	A. S. Murray.....	London, Ont.
J. Dangerfield.....	(Not located.)	Fred. S. Neff.....	Nashua, N. H.
John T. Dodge.....	Milbury, Mass.	De Witt B. Nettleton.....	(Not located.)
Dwight Dutcher.....	Port Jervis, N. Y.	Rudolph Pagan.....	Wellsborough, Pa.
Sylvester Eastman.....	Providence, R. I.	W. H. Peters.....	Blissville, Mich.
John Ellis.....	(Not located.)	Chas. Prentice.....	New York
Fancher.....	Glen Cove, L. I.	Stephen Preston, Jr.....	New York
E. J. Faust.....	Allentown, Pa.	Geo. D. Pringle.....	Guelph, Ont.
J. B. Farington.....	Woonsocket, R. I.	Edward F. Robinson.....	Elsworth, Me.
F. A. Friedler.....	Milton, Pa.	Walter F. Robbins.....	Skowhegan, Me.
W. W. Fisher.....	Watsonport, Pa.	Geo. H. Rogers.....	Lowell, Mass.
A. D. Fouchart.....	Williamsport, Pa.	Charles Safford.....	Kingston, N. Y.
Teressa Freeman.....	Blossburg, Pa.	H. C. Sammis.....	North Port, L. I.
E. A. Gage.....	Haverhill, Mass.	F. B. Sanborn.....	Salem, Mass.
Thos. H. Gardner.....	(Not located.)	S. C. Scantlebury.....	White River Junction, Vt.
Jas. G. Garrett.....	Petersburg, Va.	Isaac M. Schwab.....	Savannah, Ga.
Charles P. Gomph.....	Utica, N. Y.	W. P. Sedgwick.....	Bath, N. Y.
G. W. Goodabe.....	Machias, Me.	Andrew H. Schilling.....	Oswego, N. Y.
Chas. H. Gorton.....	Gloversville, N. Y.	Herbert E. Shoup.....	Canton, O.
F. L. Guthmann.....	Youngstown, O.	Julius Silberstein.....	(Not located.)
J. R. Graves.....	Corry, Pa.	Isaac W. Skinner.....	Waltham, Mass.
Fred. Guyott.....	Malone, N. Y.	Ewing Smith.....	Nashville, Tenn.
F. L. Hall.....	Carthage, N. Y.	P. J. Smith.....	Cumberland, Md.
S. A. L. Harmon.....	Philadelphia, Pa.	C. A. Snell.....	Southbridge, Mass.
Will. Haseltine.....	Kokomo, Ind.	Chas. P. St. John.....	Prattsburg, N. Y.
C. L. Haskins.....	Saratoga, N. Y.	Robert Taylor.....	Cedar Rapids, Iowa.
A. H. Hayes.....	Dover, N. H.	L. W. Thompson.....	Cherry Valley, N. Y.
Geo. R. Hodsdon.....	Rochester, N. H.	John Tristram.....	South Norwalk, Conn.
A. J. Hood.....	East Orange, N. J.	A. R. Vanderbilt.....	Amsterdam, N. Y.
E. H. Hopkins.....	Penn Yan, N. Y.	A. C. Voorhees.....	New Brunswick, N. J.
Willis L. Hopkins.....	Havanna, N. Y.	J. W. Wagner.....	Mifflintown, Pa.
J. D. Howell.....	Livonia Station, N. Y.	Henry Waldeck, Jr.....	Milwaukee, Wis.
F. A. Hubbard.....	Brattleboro, Vt.	Adolph Walter, Jr.....	Jersey City, N. J.
Mary F. Hudson.....	Amesbury, Mass.	Frank Weidenfeld.....	Hudson, N. Y.
R. N. Jhnquest.....	Ansonia, Conn.	Jules Wendell.....	Oswego, N. Y.
Francis J. Kepling.....	(Not located.)	A. M. Wentworth.....	Portland, Me.
C. C. Kimball.....	Watertown, N. Y.	P. W. Whitman.....	Beaufort, S. C.
W. A. Lawrence.....	Owego, N. Y.	Joseph A. Whittaker.....	Margaretville, N. Y.
Joseph Lawton.....	Boston, Mass.	F. L. Wilson.....	Danbury, Ct.
James Lee.....	Gouverneur, N. Y.	Chas. Zoellner.....	Portsmouth, Ohio.
Saml. S. Little.....	Cumberland, Md.		

The students now at work are very successful. A class will form January 15 at 2 P. M. The average price of board is eight dollars per week.



[FROM OUR SPECIAL CORRESPONDENT.]

CINCINNATI, Dec. 19, 1888.

One of the articles of jewelry, which those who can afford them most, affect in this city during the present holiday trade, are turquoise rings and pins with the Marquise setting. This may not be new in the East, but it is new here.

An idea of the business the retailers are now doing can be gathered from the fact that they are all too busy to talk to anybody but purchasers.

A sneak thief was captured in Cincinnati on the 13th inst. who gave his name as George Norris; when searched in the station house, besides numerous articles of merchandise, there were found on his person a pair of solitaire diamond ear-rings, which, strange to relate, Clemens Oskamp, the Vine street jeweler, identified as his property, giving of them a complete description, but which have since been proved to be the property of Henry Terlau, a Covington, Ky., jeweler. Mr. Terlau was able to recognize Norris, standing among several detectives, as the man who robbed him on Monday, December 10, not only of the two ear-rings mentioned, but also of a solitaire stud, which was found concealed in Norris' neck scarf.

The thief is a compactly built blond of about thirty-five years. His hair has a tendency to curl, and lies close to his head, while his blonde moustache has a graceful droop. Contrary to the habit of thieves, he has a full, open look, and his steel blue eyes are kept constantly upon a questioner instead of being cast down. His dress is neat, but somewhat worn and of good make. Evidently he is an eastern crook. An effort to photograph his face for the rogue's gallery was unsuccessful.

The venerable Joseph Steinau, Esq., who for nearly fifty years was in the jewelry business in this city, died at his home on Walnut Hills on the 12th inst. He was the father of Abe and Chas. Steinau, both of whom own separate jewelry establishments in Cincinnati. He was born in Hochstatten, Germany, in 1818, and came to America in 1839.

A clever swindler named J. S. Jacoby was captured in Chicago early in this month for a "job" done in this city during the last month. The complainant in the case was E. E. Locke, a jeweler in the Ortiz Building, on 4th street, who charged Jacoby with having represented himself to be a peddler of fine jewelry who wanted to be started in business. So plausible was Jacoby's story, that Locke believed it all, and during November let him have upwards of \$500 worth of jewelry, a gold and silver watch valued at \$123 being in the list. Other jewelers in the city were swindled in lesser amounts, after which the swindler fled. Jacoby, who is a very smooth talker, is now in jail awaiting trial. Since his capture, Jacoby turns out to be a traveling criminal and a versatile one. He is wanted in Milwaukee and New Orleans for work similar to that done in this city.

The Vine street clock controversy referred to in this correspondence several months ago, a controversy in which two street clocks—one owned by Abe Steinau and the other by the Clemens Oskamp Co.—were involved, has been revived, and is now a subject for discussion by the municipal authorities of Cincinnati. The two jewelry establishments, be it known, are just as near to each other as a partition will admit, so that their respective street clocks may be said to be one in the way of the other. When Oskamp received the right to erect a clock at the curb, it was stipulated that no name or sign should go on it; but while his clock, which, by the way, is a thing of beauty, was being manufactured, Steinau hurried up with a clock on which his name was more conspicuously emblazoned than were the figures on the dial itself. And this is the thing which has exasperated Oskamp and got the trouble before the municipal bodies, and which will, no doubt, fetch up in Court. By way of appeasing Oskamp's wrath, Steinau has removed his name from his clock and in its place strung a lot of colored electric light lamps. The effect is very pretty.

with it, showing the effect of the magnet upon the action of the balance wheel. The whole encased in a glass covered box.

393,413—Breast Pin. Alpheus Young, Jr., Worcester, Mass. A breast pin composed of a single piece of wire bent or coiled to form a letter or letters and a spring hinge, one end portion of the wire being sharpened at its point, and arranged horizontally at the rear of the body of the pin to form a pin proper, and the opposite end portion folded upon itself, and the folded portion bent to form a catch for the pin proper.

393,416—Shirt Stud or Button. George A. A. Bowman, St. Louis, Mo. A shirt stud or button having a head, a shank, and a concave or cup-shaped base of yielding flexible material adapted to relieve the wearer of the pressure of the shank.

393,497—Grinding Machine for Cutlery. Henry A. Axtell, Montague, Assignor to the John Russell Cutlery Company, Turner's Falls, Mass.

393,637—Electric Striking Attachment for Clocks. James H. Gerry, Brooklyn, N. Y., Assignor to the Self-Winding Clock Company, same place. This device consists of a hammer-stroke-controlling mechanism, the striking mechanism actuated by a spring which is wound by an electro-magnet.

393,638—Pendulum Regulator for Clocks. James H. Gerry, Brooklyn, N. Y. Assignor to the Self-Winding Clock Co., same place. An adjustable support for a clock pendulum, consisting of a block having a portion of its periphery formed in the arc of a circle, a flexible support for the pendulum secured to said block and resting against the periphery thereof, and a device for turning the block about its center.

Issue of December 4, 1888.

393,986—Eye-Glasses. Henry E. Kirstein, Rochester, N. Y. A bellied-out offset plate is provided with an orifice, the nosepiece is provided with a clip adapted to pass through said orifice, and a stay-pin retains this clip within the orifice.

393,993—Fastening for Jewelry. John Long, Bradinrich, County of Devon, England. Patented in England October 22, 1886, No. 13,495. This fastening for brooches and other articles of jewelry consists of a single piece of sheet metal forming the shell of approximately U-shape in cross section, a central opening therein for the point of the brooch pin, and a fastening device pivoted between the walls of said shell.

394,049—Workman's Electric Time Recorder. W. K. Bassford and Edwin B. Maynard, New York, Assignors to W. K. Bassford, Jr., & Co., same place. This is an electro-magnetic time marker, provided with a regularly moving time sheet, electro-magnetic marking hammers, and a turnstile arranged so that but one person at a time can press the marking point and operate the machine.

Design Patent No. 18,777—Flask. Leroy W. Fairchild, New York.

Design Patent No. 18,778—Match Box. Leroy W. Fairchild, New York.

Design Patent No. 18,779—Cigarette Case. Leroy W. Fairchild, New York.

Design Patent No. 18,780—Match Box. Leroy W. Fairchild, New York.

Issue of December 11, 1888.

394,507—Mainspring Winder, Albert F. Robbins, Orange, Mass. This is composed of a barrel or ring within which the mainspring is to be wound, a sliding device to discharge the wound spring from which engages said barrel, a rotary spindle having the inner end of the mainspring connected with it, turning in said sliding device, and connected by slot and pin to a collar for longitudinal adjustment.

394,523—Jewelry. Benjamin D. Traitel and Jacob Rawiszer, New York, said Rawiszer Assignor to said Traitel. A finger ring or analogous article of personal adornment has within a box frame a reciprocally sliding plate pierced with one or more keyhole slots, in



The following list of patents is compiled from the records of the United States Patent Office, and specially reported to THE JEWELERS' CIRCULAR.

Issue of November 27, 1888.

393,402—Device for Exhibiting Magnetic and Non-Magnetic Watch Movements. Alfred C. Smith, New York, N. Y. A device consisting of a base plate upon which are mounted magnetic and non-magnetic balance wheels and hair springs, and a magnet so placed that each balance wheel is consecutively brought in contact

combination with an interchangeable mounting provided with rearwardly extending notched studs adapted to mesh with the slots of the sliding plate.

Design Patent No. 18,794—Match Box. Leroy W. Fairchild, New York.

Trade Mark No. 16,089—Music Boxes. M. J. Paillard & Co., New York. The word "Sublimette."

Issue of December 18, 1888.

394,603—Plated Wire Stock for Jewelry. John S. Palmer, Providence, R. I. Filed June 4, 1888. This consists of plated wire stock composed of wire overlaid with a more valuable metal of varying thickness.

394,816—Clock. Charles Bickford, Boston, Mass. Filed April 5, 1887. A time movement consisting of a time train and a mainspring having frictional contact with its inclosing barrel, so as to slide thereon when fully wound, are combined with connections between the barrel of the striking movement and the said mainspring, whereby the latter is partially wound at each periodical release of the striking spring.

394,845—Timepiece Dial. Martin V. B. Ethridge, Boston, Mass. Assignor of two-thirds to John Swann, New York, N. Y., and Henry E. Waite, West Newton, Mass. Filed January 18, 1888. The parts are a series of radial spindles, a rotative gear connecting with the spindles and provided with a circular ratchet, a rocking lever fulcrumed behind the gear and carrying weights on its opposite ends, and a finger or hook-pawl on the lever to engage the ratchet, together with mechanical devices for adjusting the weights to cause the lever to rock and the gear thus to revolve and shift the spindles.

394,919—Watch Regulator. Eugene F. L. Grandjean, Bienne, Switzerland. Filed July 30, 1888. The balance bridge has a notched and undercut annular rib, and the regulator lever has a notched ring, fitting within such annular rib, so that the regulating lever can be inserted or removed by springing the notched ring.

394,928—Finger Ring. David Kutner, Brooklyn, N. Y., Assignor to Anna M. Kutner, same place, and Louis Kaufman, New York, N. Y. Filed May 17, 1888. This ring, formed with a gem box and surrounding flange, has screw sockets in combination with screw clamps, having heads made narrow in one direction and of considerable length in the opposite direction to overlap the edges of the gem and permit its removal from the gem box.

394,933—Stop Watch. Ami L. Piquet, Brassus, Assignor to Agassiz Fils, St. Imier, Switzerland. Filed October 19, 1886. An oscillating shaft or arbor is so mounted that one end only swings, said shaft or arbor carrying two wheels, of which the one on the upper or swinging end is capable of engaging with the stop watch wheel, and the other at or near the lower end of the shaft opposite the one that swings is permanently engaged with one of the wheels of the works.

Design Patent No. 18,815—Handle for Cutlery. Frederick R. Kaldenberg, New York, N. Y. Application filed November 8, 1888. Term of patent 7 years.

Design Patent No. 18,816—Casket Handle. Dennis Leonard, Cleveland, Ohio, Assignor to the Cleveland Burial Case Company, same place. Application filed October 18, 1888. Term of patent, 7 years.

Design Patent No. 18,817—Watch Case. Fred. Parker and Harry Parker, Jersey City, N. J. Application filed November 14, 1888. Term of patent 14 years.

Design Patent No. 18,821 and 18,822—Watch Bridge. Charles Willis Ward, Yonkers, N. Y. Application filed November 7, 1888. Term of patents 7 years.

Problems in the Detached Lever Escapement.

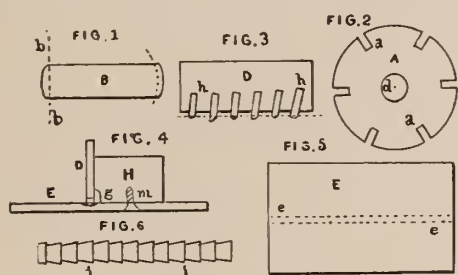
BY DETENT.



WE LEFT OUR garnet slips for pallet stones with four of their faces polished. What remains to be done is to grind off one end square to go into the slot in the steel pallet arms, and then grind and polish the angular end on which the scape wheel acts. In all the later made American watches the impulse face is rounded, as was explained in a recent article of these problems. The rounding can be done by placing the garnet slips we have just ground, one at a time, in the slide described in September number of this journal, or they can be ground in a plate slotted to receive six. I consider a good

lot of pallet stones an essential, and would advise the reader to make themselves a dozen or two at a time. In flattening three at a time, as described in November, we can repeat until we have a dozen slips ready for rounding. Now, let us take a piece of sheet brass about $\frac{1}{8}$ of an inch thick and cut out a disc $\frac{3}{4}$ of an inch in diameter, then cut six slots in the edge as deep as our pallet stones are wide. At fig. 2 is shown such a disc with the slots at *a a*. These slots are cut parallel to the axis and are arranged as shown. Into these slots the garnet slips are cemented with shellac. The idea is the little garnet slips for pallets are placed one in each recess, so one end protrudes just enough to grind off square, and form the end which goes into the slot of the pallet arm. At fig. 1 is shown magnified view of one of the garnet slips, and the dotted line *b b* defines the square end of the slip as ground off when placed in the disc *A*. A hole *d* is made in the disc, into which the end of a piece of taper wire can be inserted to hold it in the lamp to warm the disc so as to properly cement in the disc *A* the six pallet stones to be squared off. The grinding is very simple and conducted as follows: The disc *A* is lain with the side from which the ends protrude and which are to be ground off, downward on a copper or lead lap on which is smeared emery and water, and the disc is rubbed about until the ends of the stone slips are ground even and smooth with the flat side of the disc. These ends need no polishing. If a flat diamond lap is used it can be a piece of copper one inch wide and $2\frac{1}{2}$ long; the diamond dust can be burnished in by rolling a piece of hard steel wire over the diamond dust sprinkled on the face of the copper. A copper card plate, such as plate engravers use for cards, will make good lap. The entire face of the plate need not be charged; only a small surface is all that is required, say, one inch wide by two long. When such a lap is used the disc is rubbed back and forth, keeping the surface of the lap wet with water. The card plate lap can also be used with emery and water, the only objection is it is slower. The next appliance we require is a flat piece of hard sheet brass, 2 inches long and $\frac{3}{4}$ of an inch wide, and as thick as the garnet slips are wide. Into one edge of this brass strip we saw six slots as deep as we wish our pallet stones long. These slots (shown at *h*, fig. 3) are cut at angles corresponding to the angles we desire on the pallet stones, as, for instance, the three slots at the left in fig. 3 are for entrance pallets, and the three to the right are for exit pallets. The slips are securely cemented into the slots with the composition of shellac and gum myrrh already mentioned. It will be noticed the slots are each cut at a varying angle; this is done to give us a chance to select a stone with an angle adapted for our escapement, as will be subsequently considered. Now comes the grinding of the rounded face for the

impulse plane; to do this we can attach the plate *D* to the slide bar *n*, September number, or we can do the grinding and polishing entirely by hand. If we do it by hand we provide a copper card plate $3\frac{1}{2}$ inches long and 2 inches wide, and in the face of it file a concave groove as shown *ee*, fig. 5; in this cut *E* represents the copper plate. This groove *ee* need not be more than one-fifth of an inch deep, and can be started with a common rat tail file, but it should be finished by cleaning out with cutter made from a piece of steel wire five thirty-seconds of an inch in diameter and 2 inches long, turned into cutting edges as shown at *ii*, fig. 6. This piece of steel is hardened and used to round out the groove *ee*. We prepare two plates like *E*, one for diamond or emery to do the grinding, and the other to polish, using tripoli and water. In using the float *F*, fig. 6, it is lain flat in the groove and rubbed back and forth. For grinding the brass plate *D*, a piece of hard wood 4 inches long, $\frac{1}{2}$ of an inch thick and 1 inch wide is screwed to the plate *E*, so one edge comes to the line *f*, fig. 5. An end view of the plate *E* and wood block *F* is shown in fig. 4. The block *H* is cut away at *g* to prevent the pallet stones set in *D* from scraping on the block. In grinding the plate *D* is pressed with the thumb and finger against the wood



piece *H*, and, at the same time, downward into the groove *ee*. The brass plate *D* is rubbed back and forth in the groove *ee* until all the stones are rounded on the ends. By changing the groove of one of the plates *E* with fine diamond dust, the grinding is accomplished very quickly, and even when emery is used the grinding is fairly rapid. When changing from the grinding groove *ee* to the corresponding polishing groove, if the curves of the groove do not match the wooden guide, *H* can be moved back or forward to bring the work to the proper adjustment. The device just described, simple at it is, will produce as fine pallet stones as we can desire. It is not to be expected that a novice could make perfect pallets the first time he tried, but a very little practice will soon enable one to satisfy himself, no matter how exacting he might be. By adopting the plan I have suggested, we can make pallet stones in such a variety as will give us great opportunities to select just such a stone as we desire to correct faults. A friend of mine calls making corrections in a lever escapement "taking the leaks out of it." This is very true, because the power of the mainspring leaks away in a bad escapement at every imperfect action, and the consequence is a poor motion and irregular time keeping.

THE BOTCH.—The botching in another trade has at all times been considered a heinous crime, especially by the guilds of the middle ages. A botch (signifying in this instance "Jack-of-all-trades—a tradesman who dabbled in other trades") was looked on with contempt, and yet the greatest inventions and improvements of the time were made by them. Silvermann, a journeyman bookbinder, revolutionized the construction of organs and pianos by his improvements; Arkwright, a barber, invented the spinning frame; Hargrave, a carpenter, built the first spinning jenny; Jacquard, a dealer in straw hats, invented the remarkable loom named for him; Herschel, a musician, improved the telescope; Watt, an instrument maker, improved the steam engine; Ferguson, a coal miner, applied steam; Böttger, a druggist, composed porcelain; Sennefelder, an actor, invented lithography—in short, the majority of those who opened

new paths in the fields of trade and industry were botches in the signification of the guild laws.

The Jewelers' and Tradesmen's Company.

GILBERT T. WOGLOM, *President*.

THOMAS A. YOUNG, *1st Vice-Pres.*

EPHRAIM S. JOHNSON, JR., *Sec'y.*

SHUBAEL COTTLE, *2d Vice-Pres.*

SAMUEL W. SAXTON, *Treasurer*.

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THOMAS A. YOUNG,..... Ex-President National Association of Commercial Travelers;

Chairman Legislative Committee and Vice-President of the Commercial Travelers'

Asso'n, State of N. Y.; President Traders' and Travelers' Union.

CHARLES F. ROBERTS, M. D., *Medical Director*, 69 E. 54th St., N. Y. City.

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GILBERT T. WOGLOM,..... Gilbert T. Woglom.

WILLIAM B. KERR,..... Kerr & Battin.

SAMUEL SONDEHEIM,..... D. & M. Bruhl.

Superintendent, BENJAMIN O. LAMPHEAR,

Counsel, JAMES M. HUNT,..... (of Rudd & Hunt) 31 & 33 Pine Street.

At recent sessions of the Executive Committee the following have been granted certificates of memberships:

Ewin M. Mortimer, with E. Karelsen; Elliott H. Norton; William T. Mount; Siegfried Rosenhaupt; Simon Sichel and Moses N. Strauss, with Samuel Eichberg; Theodore W. Whittemore, of F. Bianchi & Co.; Bernard Karsch; Henry Fuchs; Henry Henrich, of Henrich & Graves; David Gundling, of D. Gundling & Co.; Robert F. Cooke, John Y. Bettys, Charles Bantle, all of New York City, and Clarence T. Platt, Newark, N. J.; Lionel Solomon, with B. E. Daggett & Co. Providence; Ed. B. Dand, Jr., Metuchen, N. J.

It has been stated in the reports of an association analogous in its purposes to the Jewelers' and Tradesmen's Company that "with regard to the longevity of societies similar to ours, the facts of history are too stubborn to be overborne by either words or figures, and so long as the fact stands that with due observance of the essential principles of co-operation, mutual organizations have outlived the longest-lived insurance companies, it cannot be truthfully stated that the co-operative system is a failure." Therefore, in adopting and observing the principles essential to co-operation as a condition of permanence, its founders have acted wisely. The graduated and ageing feature of the mortuary assessments of this company was discussed in the last issue of *THE JEWELERS' CIRCULAR*. The necessity of equity therein as a prerequisite to permanence was shown, and as the system of assessing for deaths as they occur is the very foundation upon which is to be builded the good work of the society, too much attention to that "essential principle" can hardly be given.

Another "essential principle" which has been commented upon is the feature of a trade organization admitting those identified with other trades or professions. The propriety of this feature is reinforced by a study of statistics of co-operative associations. The *Chicago Illustrated Century* for May, 1888, says:

"In the majority of companies which are confined to any one class, there is a great proportion of increase (in death rate) with the company's age, as the insured correspondingly become old and die."

The organ of a prominent Western masonic society in June, 1888, in discussing this question after a study of the reports of the societies to the insurance commissioners of most of the states, says:

"The record also shows that those associations which confine their membership strictly to the Masonic Fraternity, are not quite as successful as they used to be, and are really not the cheapest associations in which to secure life insurance.

"We find that in the old Masonic Associations which have been in operation ten years or more, and which have a membership large enough to form

a satisfactory basis for calculation, the growth has been frequently downward instead of upward during the past year. Many of them have lost ground and the cost has somewhat increased over that of former years, the lowest cost being about \$11 per thousand, and the highest nearly \$30; the average cost being over \$17 per thousand.

"The wisdom of our Association is strengthening its membership from among young men who have not yet taken the Masonic degrees, is every month more and more apparent. We were not obliged to make the change, but we foresaw that the time might come when it would be necessary, in order to maintain continued prosperity. It would seem that the other masonic associations have before their eyes sufficient evidence, by this time, that they must follow our example; which reminds us to say that we observe several of them are making the necessary preparations to do so."

Thus it would appear that the older societies are now appreciating one of the "essentials" which our Jewelers' and Tradesmen's Company foresaw and adopted at its founding.

The founders of the Jewelers' and Tradesmen's Company are not of the class of men who desire no change nor improvement in methods simply because they are changes, but prefer to stand in the ranks of those who, when by the light of reason and the force of logic they are compelled to take advanced positions, are proud to be found in their places and ready with no uncertain voice to lead their brethren into like strong positions.

The Law of Trade Marks.



THE ADOPTION by manufacturers of all classes of goods of some distinctive symbol to designate their productions has become so common as to be almost universal. Yet it is very questionable what rights one obtains in securing a trade mark through the official channels. On the payment of a fee of \$25 one can receive a certificate to the effect that he has registered a certain symbol as a trade mark, and that he is entitled to use the same in connection with certain of his specified products. But if he has specified that he desires to use it in connection with gold goods, it will not protect him if it is used upon goods made of other metal or even of debased gold. It seems to be a part of the purpose of the law that a trade mark shall be virtually a certificate of quality, and when affixed to any article shall convey assurance to the purchaser that the goods are up to the standard originally laid down by the manufacturer. An action will not lie against a person who imitates a trade mark placed upon adulterated or debased goods.

But the principal object secured in registering a trade mark under the present law is the privilege of engaging in extended litigation with a view to protecting it, while the result of such litigation is a matter of very grave doubt. An unscrupulous imitator of a trade mark can, nine times out of ten, with the aid of an equally unscrupulous lawyer, find means for evading the penalties intended to attach to such offence. The trade mark law, as originally enacted by Congress, was far reaching in its scope, but when a case came before the Supreme Court that body decided that the law was unconstitutional, inasmuch as it undertook to establish a rule for commerce conducted entirely within a State, as well as outside, whereas the power of Congress is limited to the regulation of commerce with foreign countries, with the Indians and between the several States. Then Congress undertook to make another law, and the existing one protects trade marks used in commerce with foreign countries and with the Indians, but not within a single State, or between the States. A State cannot make laws to apply to commerce transacted outside of its borders, so that, practically, as we are informed by excellent authority, trade marks are virtually without protection in commerce that reaches into two or more States, so that the sum paid for registering a trade mark secures to the payee few, if any, rights that another is bound to respect. Ordinarily, and with honorable men,

the mere announcement by a manufacturer that he has adopted a certain symbol as a trade mark will cause that symbol to be respected, but there are occasionally instances cropping up where pirates attempt to trade upon the reputation of another, and litigation follows, for the man who has paid his money for a certificate usually feels that it is worth fighting for.

This chaotic condition of the trade mark laws has given rise to so much trouble that a movement is on foot to secure new legislation both by Congress and the State Legislature this winter. It is desired that the Federal law shall be so amended as to protect a trade mark when used in connection with foreign or inter-state commerce, and that the State law shall give it more efficient protection in commerce within the State. It will, no doubt, be far easier to secure State legislation than Federal, for Congress is so fearful of invading the constitutional rights of States, and so precipitating a political agitation on the lines laid down by John C. Calhoun years ago, that it carefully avoids every question that can be left to State legislation. But a strong, effective law in this State would do much to give a value to trade marks that they do not now possess, for other States would be very apt to copy it. A trade mark, like a patent, should cover property rights in the thing registered or patented, and any infringer of those rights should be subjected to severe penalties. In a suit in connection with a trade mark, the production in court of the certificate of registration should be accepted as *prima facie* evidence that the owner had vested rights thereunder, leaving the burden of proof upon the infringer to show that the certificate is invalid. Instances of protracted and costly litigation over the right to use a certain trade mark will occur to our readers, as one or two such cases within the trade have become *causes celebres*. A trade mark often becomes a thing of great value to the manufacturers, as, for instance, that of the Gorham Manufacturing Co., Rogers & Bro., and many others that we could name; while it is, considered as property, intangible, yet it is of inestimable value to its owners. The trade mark of many well-known manufacturers in the trade is generally accepted as a certificate of value, and persons will buy goods having these symbols in preference to others that may be equally good that have not such endorsement. It is like the good will of a business long established and well located, often more valuable than the stock in hand. The title of a paper is its trade mark, and, together with its good will, often makes up all the property it owns, as many large journals possess none of the appliances and machinery essential to a printing office. It hires all its work done, and if an attempt were made to levy an execution against it there would be nothing tangible for the sheriff to take hold of, while the goodwill of the concern might be very valuable. Because it is intangible it is beyond the reach of the sheriff—at least, it was so held in one case that we know of, and the sheriff, when looking for property to satisfy an execution, did not attempt to sell the goodwill and trade mark of the concern. The effort to secure better legislation on this subject is well worth the attention of the trade, and when bills are introduced either in Congress or the Legislature, it would be well to see that they are properly prepared, and do not give away more than they secure.

ELECTRICITY AS INDUSTRY.—The English scientist, Edward Graves, has estimated the number of people who obtain their immediate support from the science of electricity. To this he counts telegraph and telephone officials and operators, as well as those working in the factories of electric light apparatus, cables, etc.; while the many thousands who partly use electricity in their calling are not included. According to reliable statistics of the civilized countries, Graves found that in England alone 100,000 people live exclusively from the industry of electricity, while in the whole world 5,000,000 people gain their livelihood by it.

Precious Stones in the United States.

BY GEO. F. KUNZ.

[From Mineral Resources of the United States, 1887, published by the United States Geological Survey.]

Gem mining.—During 1887 no work was done either at Mount Mica, Paris, Maine, or at Stony Point, North Carolina, which are the two most noted localities where gems are sought for systematically. At Mount Apatite, Auburn, Maine, some work was carried on during the fall of 1888; \$200 worth of tourmalines and \$400 worth of other minerals were found.

Several localities in North and South Carolina and Kentucky have been opened and ordinary mining operations carried on for the purpose of producing zircon, and several other comparatively rare minerals which have been only looked upon as gems heretofore, but are now used for making the oxides of zirconium, lanthanum, cerium, etc. These oxides are needed for manufacturing purposes.

The following table gives an approximation of the value of the

cific gravity was found to be 3.527. Curious long, shallow pittings mark the surface. A stone of from $1\frac{1}{2}$ to 2 carats could be cut from it.

Mr. L. O. Stevens, of Atlanta, Georgia, has informed the writer that a colored man called on him during the past year with a 2-carat diamond, defective and of poor color, which he stated he had found in his garden within a few miles of Atlanta. He has shown no desire to sell or lend the stone for examination.

Zircon.—Opaque green zircons in crystals 1 inch long and $1\frac{1}{2}$ inches wide, were found by Mr. Nimms in Saint Lawrence county, New York, at the town of Fine. They were curious, but not of gem value. Fully 25 tons of this mineral will be raised during 1888, from Henderson county, Kentucky, for use in a new incandescent gas-burner manufactured in Philadelphia.

Beryl.—Prof. Eugene A. Smith obtained from Coosa county, Alabama, some light golden yellow beryl of sufficient transparency to furnish small gems. Blue green beryl that afforded fair gems was

Estimated production of Precious Stones in the United States from 1883 to 1887.

Species.	1883.			1884.			1885.			1886.			1887.		
	Value of stones found and sold as specimens and curiosities, occasionally polished to beautify or show structure.	Value of stones found and sold to be cut into gems.	Total.	Value of stones found and sold as specimens and curiosities, occasionally polished to beautify or show structure.	Value of stones found and sold to be cut into gems.	Total.	Value of stones found and sold as specimens and curiosities, occasionally polished to beautify or show structure.	Value of stones found and sold to be cut into gems.	Total.	Value of stones found and sold as specimens and curiosities, occasionally polished to beautify or show structure.	Value of stones found and sold to be cut into gems.	Total.	Value of stones found and sold as specimens and curiosities, occasionally polished to beautify or show structure.	Value of stones found and sold to be cut into gems.	Total.
Diamond.....	.....	.....	.....	.....	\$800	\$800	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sapphire Gems.....	\$200	\$2,000	\$2,200	\$250	1,500	1,750	.....	\$500	\$500	\$250	500	750	.....	\$500	\$500
Chrysoberyl.....	100	.....	100	25	.....	25	.....	.....	.....	.....	.....	.....	.....	.....	.....
Topaz.....	1,000	.....	1,000	200	300	500	\$1,000	250	1,250	1,000	.....	1,000	1,500	500	2,000
Beryl.....	200	300	500	300	400	700	250	500	750	.....	5,500	5,500	500	3,000	3,500
Emerald.....	500	.....	500	.....	.....	.....	.....	.....	3,200	3,000	200	3,200	.....	.....	.....
Hiddenite.....	100	500	600	.....	.....	.....	.....	.....	2,500	3,500	1,000	4,500	.....	.....	.....
Tourmaline.....	.....	.....	.....	1,500	500	2,000	500	100	600	3,500	2,000	5,500	300	200	500
Smoky quartz.....	2,500	7,500	10,000	2,000	10,000	12,000	2,000	5,000	7,000	2,000	5,000	7,000	1,500	3,000	4,500
Quartz.....	10,000	1,500	11,500	10,000	1,500	11,500	10,000	1,500	11,500	10,000	1,500	11,500	10,000	1,500	11,500
Silicified wood.....	5,000	.....	5,000	10,000	500	10,500	5,000	1,500	6,500	500	1,000	1,500	35,000	1,000	36,000
Garnet.....	1,000	5,000	6,000	1,000	3,000	4,000	200	2,500	2,700	1,250	2,000	3,250	2,500	1,000	3,500
Anthracite.....	.....	2,500	2,500	.....	2,500	2,500	.....	2,500	2,500	.....	2,500	2,500	2,000	.....	2,000
Pyrite.....	1,500	500	2,000	2,000	1,000	3,000	1,500	500	2,000	1,500	500	2,000	2,000	500	2,500
Amazonstone.....	3,500	250	3,750	2,500	250	2,750	2,500	250	2,750	2,000	250	2,250	1,500	200	1,700
Callinite (piñestone).....	10,000	.....	10,000	10,000	.....	10,000	10,000	.....	10,000	.....	10,000	.....	5,000	.....	5,000
Arrow points.....	1,000	.....	1,000	1,000	.....	1,000	.....	2,500	2,500	.....	2,500	2,500	.....	1,500	1,500
Trilobites.....	500	.....	500	500	.....	500	.....	1,000	1,000	1,000	.....	1,000	500	.....	500
Sagenitic rutile.....	500	500	1,000	500	500	1,000	.....	250	250	1,750	.....	1,750	.....	.....	.....
Hornblende in quartz.....	500	100	600	500	100	600	.....	300	300	200	.....	200	.....	100	100
Thompsonite.....	250	500	750	250	500	750	250	500	750	100	300	400	250	500	750
Diopside.....	200	100	300	.....	.....	.....	100	.....	100	.....	.....	.....	50	.....	50
Agate.....	1,000	500	1,500	4,000	500	4,500	1,000	1,000	2,000	1,000	1,000	2,000	3,000	1,000	4,000
Chlorastrolite.....	500	1,000	1,500	500	1,000	1,500	.....	.....	.....	500	500	1,000	300	500	800
Turquoise.....	1,500	500	2,000	1,500	500	2,000	1,500	2,000	3,500	1,000	2,000	3,000	1,000	1,500	2,500
Moss agate.....	1,000	2,000	3,000	1,000	2,000	3,000	500	2,000	2,500	1,000	1,000	2,000	200	750	950
Amethyst.....	2,000	250	2,250	2,000	250	2,250	2,000	100	2,100	2,000	100	2,100	2,000	100	2,100
Jasper.....	2,000	500	2,500	2,000	500	2,500	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sunstone.....	250	200	450	250	200	450	250	100	350	200	100	300	50	100	150
Fossil coral.....	500	250	750	500	250	750	.....	.....	.....	1,000	.....	1,000	1,500	500	2,000
Rutile.....	.....	.....	.....	.....	.....	.....	750	.....	750	.....	.....	750	.....	.....	.....
Total.....	47,300	26,450	73,750	54,275	28,550	82,825	39,300	24,850	69,850	49,000	29,510	78,510	70,650	17,950	88,600
Gold quartz.....	40,000	75,000	115,000	40,000	100,000	140,000	40,000	100,000	140,000	.....	.....	40,000	.....	.....	75,000

gems produced in the United States during the past five years. It does not include about 20 tons of zircon and quite large quantities of allanite, monazite, and samarskite, which were mined for use in manufactures as stated above.

Exceptional discoveries of gems—Diamond.—In April, 1887, Mr. Lewis M. Parker, a tenant on the farm of Daniel Light, three-fourths of a mile northwest of Morrow Station, and 13 miles south of Atlanta, Georgia, found a diamond on the farm. The stone afterwards came into the possession of Mr. W. W. Scott, of Atlanta, who sent it to the writer for examination. It proved to be an octahedral crystal weighing $4\frac{1}{2}$ carats (828 milligrams), two-fifths of an inch long and one-fourth of an inch wide. It measured 9 by 10 by 7 millimeters, is slightly yellow and has one small black inclusion. The spe-

reported by Mr. William E. Hidden, from Mitchell county, near the Yancey county line, North Carolina.

Phenacite.—Dr. S. L. Penfield describes phenacite from Topaz butte, 5 miles north of Florissant and the same distance from Mount Antero, Colorado. Mr. W. B. Smith describes the occurrence of topaz and thenacite at Topaz butte (*American Journal of Science*, February, 1887, III. Series, vol. 34, p. 130). An extensive find of phenacite crystals (few of gem value, however), associated with aquamarine crystals, was made at Mount Antero, Colorado, in the fall of 1887. The phenacites were almost quartzoids in form. The occurrence is described by the Rev. R. F. Cross, in a note in the *American Journal of Science*, February, 1887, p. 161, vol. 34.

Garnet.—A variety of spessartite garnet was found at Amelia Court

House, Virginia, in masses several inches across, and dark brown, dark red, or honey brown in color, which would afford cut gems from 1 to 10 carats in weight. These are the finest specimens of this variety of garnet yet found. Fully 1½ tons of the almandite garnets of Salida, Colorado, were found during the past year and sold as tourists' or mineralogical specimens at from 30 cents to \$1 a pound. One absolutely perfect dodecahedron weighed over 14 pounds. In the proceedings of the "Philadelphia Academy of

IMPORTS.

Diamonds and other Precious Stones imported and entered for consumption in the United States, 1867 to 1887 inclusive.

Fiscal years ending June 30	Glauciers.	Dust.	Rough or uncut.	Diamonds and other stones not set.	Set in gold or other metal.	Total.
1867....	\$906	.....	.....	\$1,317,420	\$291	\$1,318,617
1868....	484	.....	.....	1,060,544	1,465	1,062,493
1869....	445	\$140	.....	1,997,282	23	1,997,891
1870....	9,372	71	.....	1,768,324	1,504	1,779,271
1871....	976	17	.....	2,349,482	256	2,350,731
1872....	2,386	89,707	.....	2,939,155	2,400	3,033,648
1873....	.....	40,424	\$176,426	2,917,216	326	3,134,392
1874....	.....	68,621	144,629	2,158,172	114	2,371,536
1875....	.....	32,518	211,920	3,234,319	.....	3,478,757
1876....	.....	20,678	186,404	2,409,516	45	2,616,643
1877....	.....	45,264	78,033	2,110,215	1,734	2,235,245
1878....	.....	36,409	63,270	2,970,469	1,025	3,071,173
1879....	.....	18,889	104,158	3,841,335	539	3,964,920
1880....	.....	49,360	129,207	6,690,912	765	6,870,244
1881....	.....	51,409	233,596	8,320,315	1,307	8,606,627
1882....	.....	92,853	449,513	8,377,200	3,205	8,922,571
1883....	.....	82,628	413,996	7,598,176	(a)2,081	8,126,881
1884....	22,208	37,121	367,816	8,712,315	.....	9,139,460
1885....	11,526	30,426	371,679	5,628,916	.....	6,042,547
1886....	8,949	32,316	302,822	7,915,660	.....	8,259,747
1887....	9,027	33,498	262,357	10,526,998	.....	10,831,880

a Not specified since 1883.

Imports of substances not included in the foregoing table, 1868 to 1887, inclusive.

Fiscal years ending June 30	Unmanufactured agates.	Bookbinders' and other manufactured agates.	Carneian.	Brazilian pebbles.	Amber.	Amber beads.	Unmanufactured coral.	Manufactured coral.	Unmanufactured meerschaum.	Total.
1868....	.....	.....	.....	.....	.....	.....	.....	\$62,270	.....	\$62,270
1869....	.....	\$70	\$269	.....	.....	.....	.....	22,417	\$6,407	29,590
1870....	.....	.....	766	.....	1,433	.....	.....	18,975	3,998	25,172
1871....	.....	1	661	.....	180	.....	.....	37,877	698	39,417
1872....	.....	529	207	.....	2,426	.....	.....	59,598	2,191	65,037
1873....	\$151	1,370	.....	\$1,237	1,531	\$895	230	63,805	5,608	74,470
1874....	177	1,524	.....	.....	1,448	1,057	527	28,152	279	33,155
1875....	520	5,165	.....	57	7,166	715	1,278	33,567	2,902	51,373
1876....	293	1,557	.....	.....	15,502	187	109	33,559	21,939	73,156
1877....	579	1,904	(a)69	.....	17,307	329	718	28,650	9,304	58,860
1878....	82	404	.....	76	13,215	1,119	1,252	12,667	16,308	45,123
1879....	138	361	.....	.....	17,821	203	147	11,327	19,088	49,088
1880....	57	2,346	.....	.....	36,860	2,317	62	5,492	30,849	77,983
1881....	486	1,700	.....	5	42,400	1,102	89	2,501	72,754	121,037
1882....	901	5,084	.....	111	72,479	4,174	1,474	669	56,118	141,010
1883....	14	2,895	.....	.....	40,166	3,472	681	(b)1,303	58,885	107,416
1884....	.....	6,100	.....	3,496	56,301	4,692	158	.....	43,169	113,916
1885....	124	.....	.....	6,541	21,722	3,242	659	.....	42,590	74,878
1886....	284	.....	.....	17,379	27,213	5,665	219	.....	23,417	74,179
1887....	12	1,247	.....	35,291	34,238	10,011	307	.....	35,478	116,584

a Not separately classified since 1877.

b Not specified since 1883.

Natural Sciences," 1886, p. 355, Dr. George Koenig describes a titaniferous garnet from southwestern Colorado, and also analysis of schorlomite from Magnet Cove, Arkansas, which he finds to be titaniferous garnet.

Tourmaline.—A large number of green tourmalines, some quite stout and several inches in length, have been found at Franklin Furnace, Sussex county, New Jersey, but although they are an important

addition to our mineralogical collections and the outer parts of some of the crystals are of a rich almost chrome green, yet not a single one was observed which would cut a transparent gem of even a few carats.

Prof. R. B. Riggs, of the laboratory of the Geological Survey, recently made over 25 analyses of tourmalines of all colors. He found the question of the color of the lithia tourmaline a very interesting one. The color of the iron and magnesian varieties depends on the amount of iron present. It ranges from the colorless De Kalb through all the shades of brown to the Pierrepont black, while the lithia tourmaline, containing more or less maganese, gives the red, green, and blue, as well as the colorless varieties. The shades of color do not depend on the absolute amount of maganese present, but rather on the ratios existing between that element and iron. Thus, when the amount of maganese bears a specific proportion to the iron, we have the colorless, pink, or very pale green tourmaline. An excess of maganese produces the red varieties; and if the iron is in excess the various shades of green and blue result.

Rubellite.—Mr. William Irelan, Jr., reports the finding of transparent rubellite in fine crystals 1 to 2 inches long, in San Diego county, California.

Hiddenite.—Rev. Alfred Free, in a report on a placer mine at Bracket Town, McDowell county, North Carolina, mentions the finding of a small crystal of spodumene of the hiddenite variety. He had also observed blue, green, and pink tourmaline at the same locality.

Rock crystal.—In the last report reference was made to the occurrence of rock crystal in what was believed to be a part of Virginia, but which, on visiting the locality, the writer found was really the mountainous part of Ashe county, North Carolina. My attention was first called to this locality by the receipt thence, by Messrs. Tiffany & Co., of a 51-pound fragment of a large crystal, which was said to have been broken from a mass weighing 300 pounds by a twelve-year old mountain girl. This large crystal was found on the Mintor Blevin farm on Long Shoal creek, in Chestnut Hill township, though crystals have also been found at two places 600 feet apart on the L. C. Gentry farm, about one mile from the former locality. All three places are 50 miles from Abingdon, Virginia, and 40 miles from Marion, Virginia. Crystals have also been found close to the north fork of Piny Creek, on the Saint Ledger Brooks farm. At the latter place was found a remarkably clear distorted crystal, weighing 20½ pounds, which is absolutely perfect, and is the finest piece of rock crystal ever found in the United States; and on the Gentry farm one crystal was found weighing 188 pounds, and another weighing 285 pounds. The latter was 29 inches long, 18 inches wide, and 13 inches thick, showing one pyramidal termination entirely perfect and another partly so; it sold for over \$500 for use in the arts. A number of others have also been found. All these localities are on a spur of Phoenix Mountain, and the crystals have all been found in decomposed crystalline rocks, principally coarse felspathic granite, which has all decomposed even to a greater depth than that at which these crystals occur. Most of them are obtained by digging where one crystal has been found or striking and unearthing them with a plow. Altogether several dozen crystals have been found, weighing from 20 to 300 pounds each, and future working will doubtless bring many fine ones to light. Some of these afford larger masses of clear rock crystal than have ever before been found in the United States, and suggest its use for such objects of luxury as crystal balls, clock cases, mirrors, etc., which are now to be seen in the Austrian treasury at Vienna.

From the vicinity of Fairfax county, Virginia, Mr. James W. Beath obtained quartz with alternate green and white veinings, the green being produced by chloritic inclusions. When cut it forms an interesting ornamental stone, and several hundred dollars' worth of it have been sold.

Mr. H. L. Hosmer reports that crystals of smoky quartz

a foot in length are occasionally found at Sterling, Montana.

Chrysoprase.—Mr. William Irelan, Jr., reports from Tulare county, California, beautiful semi-transparent chrysoprase of fine color. This has also been found in Douglas county, Oregon.

Agate.—At Sioux Falls, Dakota, the company that is cutting and polishing the agatized wood from Arizona and the quartzite found at Sioux Falls has, after a great deal of experimenting, perfected the methods of sawing and polishing hard materials so as greatly to reduce the cost. Among the objects produced were a round column $11\frac{1}{4}$ inches wide and 21 inches high, cut transversely across the tree, so that the heart was visible on both sides of it, with the radiations in all directions; and sections measuring 25, 24, $17\frac{1}{2}$ and 13 inches in diameter, respectively, so highly polished that when turned with the back to the light they form a perfect mirror. All the specimens were brilliant in color and rivaled any work ever done in hard materials. The company has removed from the forest 180 tons of material, and 20 tons of sections have been ground down to show its characteristic beauties. Perhaps \$100,000 worth is now undergoing the cutting and polishing process.

Pectolite.—A massive pectolite of unusually dense structure has been announced by Mr. William P. Blake as occurring in Tehama county, California, in masses of considerable size and susceptible of a high polish. In a letter to the writer he gives the following description: "It occurs in a vein, and is broken out in rough tabular masses from 2 to 3 or more inches in thickness, but it is reported that much larger masses can be obtained. It is exceedingly tough and hard to break. The punctured surfaces are irregular, without cleavage, but have a silky luster and crypto-crystalline structure, exhibited in extremely fine inseparable fibers, which are radial, curved and interlaced, and are perhaps embedded in a siliceous magma, but the fibers constitute the bulk of the mass. The color is white, with a delicate shade of sea green, and translucent. Exposed or weathered portions lose their porcelain-like translucency, and become white and somewhat earthy in appearance, and exhibit the crypto-fibrous structure with more distinctness. Specimens cut and polished across the end of the slab-like mass show on one side a narrow selvage of breccia, made up of fragments of the pectolite and of dark-colored wall rock mixed and firmly cemented together. On the opposite side or border of the mass there are distinctly formed parallel planes of concentric layering, from the surfaces of which the fibers diverge. These layers and the bressiated border opposite show the vein-like formation of the mass between the walls. The hardness is 6 to 6.5. In the blow-pipe flame it burns to a white enamel and gives off a little water. It may be found useful as an ornamental stone for making small objects—cups, plates, handles, or for carving figures or inlaid work." This is identical with the pectolite from Alaska, described by Prof. F. W. Clarke.

Peristerite.—Large quantities of peristerite are reported by Mr. C. M. Skinner at Cavendish, Vermont, near Cavendish Falls, in the railroad cut 22 miles northwest of Bellows Falls.

Oligoclase.—Of great interest is the transparent oily green oligoclase containing small, white, starlike inclusions, which impart to the mass all the appearance of green glass, and with included white minerals found at a depth of 400 feet in mica near Bakersville, North Carolina. It was found by Mr. Daniel Bowman.

A very interesting variety of sunstone was found by Mr. J. A. D. Stephenson at the quarry in Statesville, North Carolina. Several hundred dollars' worth of it has been sold as gems.

Albite.—In the Allen mica mines at Amelia Court House, Amelia county, Virginia, as a by-product in mica mining, a remarkable series of albite has been found, tabular, but measuring 4 to 7 inches in length and forming large groups; also the same mineral in massive form of the moonstone variety, and tons of amazonstone in bright cleavages.

Rhodonite of the variety known as fowlerite has been found in Franklin Furnace, New Jersey, in groups of rich, flesh-colored crystals finer than ever before known. Some of these were 6 or 7 inches in length and several inches thick, forming groups a foot across. Although of value for gem material they possess a higher mineralogical value, and more than \$1,000 worth was sold for specimens. The rhodonite so well known as occurring in boulders at Cunningham, Massachusetts, has recently been traced to the ledge, and we may now hope to see this stone used extensively for decorative and ornamental purposes, as at this locality it is one of the richest pink and flesh colored minerals known.

Turquoise.—Additional evidence of the antiquity of the turquoise workings of New Mexico and Arizona has been gathered by the Hemenway expedition, sent out by Mrs. Hemenway under the direction of Mr. Frank H. Cushing. About 10 miles from Tempe, Arizona, where the excavations are being made, a shell encrusted with turquoise and garnet representing the form of a frog was found.

Cyanite.—Mr. Daniel A. Bowman communicates that the cyanite mentioned in the last report was found near the summit of Yellow mountain, alongside the road to Marion, about 4 miles southeast of Bakersville, North Carolina, at an altitude of 5,500 feet. Some of this is transparent, from one-eighth to one-half an inch across and several inches long. So rich is its color that it was sold for sapphire. Its low hardness unfits it to some extent for use as the gem for which it is to be worn. It is a handsome mineralogical gem, however.

Crocidolite.—In the *American Journal of Science*, III. Series, vol. 34, p. 108, Prof. A. A. Chester published analyses of the crocidolite from Beacon Hill Pole, Cumberland, Rhode Island, an interesting occurrence of this mineral, though not in gem form.

Labradorite.—The well known Labradorite rock in Lewis county, New York, is so plentiful that the reflection of the boulders has given the river that runs through the locality the name of Opalescent river. This is being extensively cut as an ornamental stone.

Mexican onyx.—The handsomest and lowest priced of our ornamental stones, and one which has been introduced most extensively, is the so-called Mexican onyx or Tecalli, as it was first called, from the town of that name in the state of Puebla, Mexico, where it is found. The deep colors are richer than those of any marble known, and its wavy stalagmitic structure and the high polish which it can take have made it popular throughout the whole civilized world. With a metal mounting the effect is greatly enhanced. It occurs in almost unlimited quantities, and fully \$500,000 worth has been used in the United States for table tops, mantels, vases, etc.

(To be continued.)

AGED WATCHMAKER.—Perhaps the oldest living watchmaker, says a report from Hamburg, is a veteran of the Napoleonic wars by the name of Göring, who lives in the small town Ottensen, near Altona. Not long ago he celebrated his 103d birthday. He was born in Lenzburg, in the Canton Aaran, Switzerland, March 14, 1785; after having learned watchmaking he enlisted as soldier, went to Russia with Napoleon, and was at the crossing of the Beresina. When discharged he went back to his trade, but never could stop long in one place, and led the life of a tramp until very old. At 80 years of age he came to Ottensen, where he has lived for the past 20 years, and has finally commenced to consider it his final home. His sight has become impaired for the last few years, but otherwise Göring feels quite well, physically and mentally. When a centenarian he was still a bold pedestrian, but he has lately relinquished his foot journeys, though he is yet a fast walker.



TO REDUCE THE PALLET DROP.—If the repairer has done any work on clock pallets which necessitated filing and closing them, he will find, when placing them in the frames along with the scape wheel, that the "drop" in the perpendicular pallet has increased considerably. This drop can be reduced by altering the front pivot hole of the pallets, or by taking the steady pins out of the back cock and moving it down, or by both methods, care being taken to steady pin the back cock in its new position after moving it. The drop of the horizontal pallet can only be altered by bending the pallets in the vise. The acting faces of the pallets, if it be a recoiling escapement, should be shaped so as to produce a slight recoil or retrograde motion of the escape wheel after a tooth has escaped from the one pallet on to the other.

TO DRAW GOLD STRIPES.—A friend asks us how to draw gold or bronze lines on iron clock cases, etc. First draw the lines with a sticky varnish or with gold size. When this is a little dry or sticky, technically called "tacky," gold leaf is applied or the bronze powder dusted on, and the sizing is allowed to dry, when the superfluous material is brushed off.

PIVOTS.—Conical pivots should not be too short, for if there is any great depth the oil heaps together at the neck, and it acts with proportionately greater strength. The shape of pivot ends when they turn against a counter pivot should be almost flat, with rounded corners. When the pivot ends are perfectly round the friction is lessened if the arbor is vertical, but is increased when the position is horizontal, because in that case the face is resting on the pivot sides, and it is increased in proportion to the strength of the pivots. When the end of the pivot is almost flat the watch will keep better time, whether lying flat or hanging vertically. Marine chronometers are always suspended in such a manner that the axis will be vertical in the diamond cap jewels. Among the pivot shapes now obsolete is the old English. The fashion in England years ago, was to have them somewhat conical or with a gorge. The neck was finer, but no real advantage was ever derived from it.

TO TIGHTEN A CANNON PINION.—Occasionally the cannon pinion is too loose upon the arbor. To remedy this, grasp the arbor lightly with a pair of cutting nippers, and by a single turn around the arbor cut or raise a small thread.

HOW TO BLUE SCREWS.—Blueing a set of screws is one of the operations that call for a special amount of practice on the part of the workmen. The temper should not be lower than light blue, and the threads should be cleaned by being worked in a piece of fir wood, with oilstone or wet emery. After trimming up the slits, smooth the heads and edges with a slip of Arkansas stone. Polish with a zinc polisher and diamantine, taking care never to work it dry or to cut the polisher. The bread used to clean them should be as free as possible from alum, the presence of which can be detected by the following simple process: Warm an ordinary table knife and stick it into the loaf; on withdrawing it a white deposit will be found on the blade. Some workmen are never able to blue screws owing to the damp, clammy condition of their hands, which prevents them from mixing up the bread properly. The screws should be lightly held in a pair of nippers, and brushed with a clean soft brush; a hard one is likely to make them red on the edges. They should be blued immediately after brushing. Drill holes in the bottom of an old barrel and place it in a blueing pan, taking care that the flame of the spirit lamp is not blown about by the external air. The success of the remainder of the process depends entirely on the judgment of the operator in lifting the screws out of the holes at the proper instant. The tweezers used must be perfectly clean.

TO CLEAN DULL GOLD.—Dull gold may be cleaned as follows: Take 80 grams (1,235 grains) calcium hypochlorite, 80 sodium bicarbonate, and 20 (308 grains) sodium chloride, and treat the mixture with three liters (3 $\frac{1}{2}$ quarts) of distilled water. It must be kept for use in well-corked bottles. Goods to be cleaned are put in a basin and covered with the mixture; after some time they are taken out, washed, rinsed in alcohol and dried in sawdust. The articles then look new.

ALUMINUM SILVER.—An alloy prepared from 1 part silver and 3 or 4 parts aluminum can be highly recommended for articles in which lightness is desired, as instruments used by ship captains—octants, sextants, quadrants and the like. The alloy is only one-third or one-fourth as heavy as silver or brass, and can be easily turned or filed. This is not the case with pure aluminum, which is too soft and clings to the file.

INTERMEDIATE GREEN ENAMEL.—Six parts crystal glass, 1 part potash, 1 part red lead, 4 parts verdigris, 4 parts borax, 1 part salt. Melt twice until commingled. A froth will rise to the surface which must be removed. Have the casting surface well cleaned from dust. A bluish green is obtained by the addition of a little cobalt oxide and mercury dissolved in chromic acid. This is to be melted, purified in water and added to the mixture.

TRANSPARENT BLUE ENAMEL.—Five parts crystal glass, 1 part cobalt oxide, 1 part borax. Melt the glass and add the borax; then while stirring, put in the oxide. Provide a good cover to keep out ashes, or else the mass will assume a dead appearance. It is usually sufficient to melt the mixture only once, but at times it becomes necessary to do this twice or three times. Do not cast the enamel until satisfied that all parts are thoroughly mixed.

TO CLEAN GILT WARE.—In cleaning gilt ware, there is a difference to be observed between articles gilt by fire or by the galvanic process and articles gilt with imitation gold. For cleaning articles gilt by the first two methods, 1 part of borax dissolved in 16 parts of water may be employed. With this solution the article is to be carefully rubbed by means of a soft sponge or brush, then rinsed with water and finally dried with a linen rag. If convenient, the article should be warmed previously to being rubbed to ensure its brilliancy.

NEW ALLOY.—A new and curious alloy is produced by placing in a clean crucible one ounce of copper and one ounce of antimony, and fusing them by a strong heat. The compound will be hard and of a beautiful violet hue. This alloy has not yet been applied to any useful purpose, but its excellent qualities, independent of its color, entitle it to consideration.

WATCHMAKER'S LATHE.—The repairer must insist on having his lathe do work of mathematical accuracy. Accuracy is the indispensable condition in repairing; an accurate lathe and fine measuring tools are the head and front of a watchmaker's "kit," but they must go together, because the finest lathe ever made is of little use unless you turn the parts used to exact sizes.

HOW TO FIT A BOUCHON.—After repairing the pivot select a bouchon as small as the pivot will admit. Open the hole of the plate or cock, so that the bouchon, which should be previously draw-filed at the end, will, with a slight pressure, stand upright in the opened hole of the plate or cock. Then with a knife cut it across where it is to be broken off, so that it may break readily when necessary. Press it into the plate on the side where the pivot works, break off, and then drive it home with a small center punch. In every repair of this nature notice should be taken of the amount of end shake of the pinion, and the bouchon should be so left that any excess may be corrected. To finish off the shoulder end a small chamfering tool should be used. This has a hole smaller than the pivot to receive a fine brass wire, which serves as a center to prevent the tool from changing its position while in use. When the wire is put through the bouchon holes the tool may be left open. The above is a far more expeditious way than using the lathe.



The following members of the trade were noticed in town since our last issue :

E. B. McClelland, Syracuse, N. Y.; Geo. W. Biggs, Pittsburg, Pa.; C. F. Greenwood, Norfolk, Va.; H. H. Densmore, Springwater, N.Y.; C. Jarecki, Erie, Pa.; J. G. Griswold, Meriden, Conn.; W. H. Saxton, New London, Conn.; H. M. Moses, Richmond, Va.; W. J. Atkinson, Philadelphia, Pa.; M. Schwed, New Haven, Conn.; C. S. Hardy, Pittsburg, Pa.; G. B. Barrett, Pittsburg, Pa.; H. A. Deming, Hartford, Conn.; G. D. Clark, Baltimore, Md.; L. B. Herr, Lancaster, Pa.; E. A. Gillett, Buffalo, N. Y.; A. Jarecki, Erie, Pa.; Geo. C. Shreve, San Francisco, Cal.; N. B. Levy, Scranton, Pa.; L. Levy, Syracuse, N. Y.; J. A. Wineburgh, Utica, N. Y.; J. H. Wattles, Pittsburg, Pa.; S. D. Engle, Hazleton, Pa.; E. Schertzinger, Mahanoy City, Pa.; C. W. Freeman, Scranton, Pa.; W. H. Longstreet, Elmira, N. Y.; J. R. Reed, Pittsburg, Pa.; R. F. Polack, York, Pa.; E. H. True, Montrose, Pa.; W. H. Lyon, Newburg, N. Y.; R. S. Gardner, Birmingham, Conn.; H. Deimel, Herkimer, N. Y.; C. Hulse, Goshen, N. Y.; A. W. Austin, South Norwalk, Conn.; A. H. Galt, Washington, D. C.; C. Williams, Seneca Falls, N. Y.; C. Weaver, Philadelphia, Pa.; L. H. Yeager, Allentown, Pa.; J. B. Capron, Bridgeport, Conn.; G. H. Woodworth, Binghamton, N. Y.; G. A. Schlechter, Reading, Pa.; J. F. Giering, Nazareth, Pa.; C. P. Starr, Owego, N. Y.; G. Marsh, Albany, N. Y.; L. S. Stowe, Springfield, Mass.; F. E. Nuse, Titusville, Pa.; J. Spencer, Norwalk, Conn.; A. Townsend, Matteawan, N. Y.; Hicks Bros., Long Branch, N. J.; R. H. Burgess, Greenwich, Conn.; J. R. Benjamin, West Winsted, Conn.; R. S. Gardner, Binghamton, N. Y.; Ernest Zahm, Lancaster, Pa.; C. K. Johnson, Morristown, N. J.; F. W. Sim, Troy, N. Y.; Mr. Greene (Morrison & Co.), Newburgh, N. Y.; W. A. Reider, Newton, N. J.; M. Hondelman, Towanda, Pa.; W. A. Chamberlin, Towanda, Pa.; W. B. Buckingham, Bridgeport, Conn.; L. Randell, Seneca Falls, N. Y.; Geo. Pechtle, Middleburgh, N. Y.; D. F. Bontecou, Troy, N. Y.; E. Van Sickle, Port Jervis, N. Y.

—Wm. J. Tracey, Burrellville, R. I., was robbed of \$2,000 worth of goods last month.

—S. F. Myers, of S. F. Myers & Co., after a siege of protracted illness, is again at his post.

—Fred. C. Newhall has succeeded to the business of his brother S. C. Newhall, Lynn, Mass.

—C. Zugsmith, Jr., Pittsburg, Pa., has decided to retire from business and is disposing of his stock.

—C. J. Tyler, South Berwick, Me., is offering his store for a bargain. See the special notice column.

—Edward McDowell, formerly at Somerset, Pa., has opened an establishment at Hastings, same State.

—A. C. Konarson, Scranton, Pa., who was selling off his stock and fixtures on account of ill-health, has since died.

—Levinski & Levine, Waco, Tex., have failed, and their stock is being sold at auction by the trustee, F. O. Rogers.

—Asa Richmond, formerly a popular traveler for Richmond & Co., is now in the grocery business in Providence.

—Max Freund, of Max Freund & Co., sailed for Europe on the *Emu*, December 15th, for an absence of several weeks.

—C. F. Clymer, Rochester, Ind., has gone out of business there, but expects to resume in the spring at some new location.

—Ludwig Nissen, of Ludwig Nissen & Co., 18 John street, has been elected one of the directors of the Metropolitan Burglar Alarm Company.

—R. J. Clay, of New York City, is negotiating with the authorities at Altoona, Pa., for the establishment of a clock factory there, employing 300 hands.

—L. O. Rand has opened a new store at the corner of East First and Bridge streets, Oswego, N. Y.

—The firm of Kocher & Blauer, San Jose, Cal., has been dissolved, Mr. Blauer retiring.

—The attachment obtained by the Non-Magnetic Watch Company against the firm of Payne, Steck & Co. has been set aside on motion of Franklin Bien, counsel for the junior attaching creditors.

—E. M. Trowern, Toronto, secretary of the Retail Jewelers' Association of Canada, failed on December 8th, with liabilities of about \$70,000, but has effected a settlement with his creditors at 33 1/3 cents cash.

—Joseph B. Mayer, the Buffalo diamond merchant, has in his possession a fine diamond of 60 carats, which he has dubbed the "Buffalo Gem," and which he claims surpasses the famous "Cleveland Gem."

—During the holiday rush a bold thief who was examining some gold watches in the store of A. Otton, 393 Myrtle avenue, Brooklyn, N. Y., grabbed seven of them, and made his escape though hotly pursued.

—Charles E. Lightner, who recently moved from Elgin, Ill., to St. Paul, has failed, it is claimed, through overstocking. The assets and liabilities are thought to be nearly equal. The stock is estimated at \$20,000.

—The factory of L. Adler & Co., manufacturers of diamond mountings, 44 Maiden Lane, was destroyed by fire, on the evening of the 19th. The cause of the fire is unknown, but the loss is fully covered by insurance.

—A. Ebert, dealer in clocks, crockery and silverware, 79 West Fourth street, Cincinnati, O., made an assignment, on December 19th, with liabilities of \$100,000 and assets of \$35,000, and has gone to Europe with a portion of his stock.

—The Pairpoint Manufacturing Company have had a busy season, and immediately preceding the holidays they were taxed to their utmost to meet the demands upon them. The Pairpoint is a wide-awake house, however, and is equal to every emergency.

—Joseph Nelson & Co., of Dunkirk, N. Y., have taken possession of the store of A. L. Benedict, Lock Haven, Pa., and are closing out the stock. It is understood that Mr. Benedict will resume business again at the same stand after he has tided over his difficulties.

—Some time ago a magnificent green tourmaline, probably the finest in the world, was found at Mt. Mica, Maine. It is now proposed to have this peerless gem mounted in a bracelet with other native gems of the Pine Tree State and presented to Mrs. Benjamin Harrison, the next lady of the White House, as the gift of the sons of New England.

—The Waterbury Watch Company illustrate in this issue their new series of ladies' watches. It is a short wind, stem set, enameled dial timepiece, with second hand and jeweled duplex escapement. Their new gentlemen's watch, series J, has made its way into favor with astonishing rapidity, and a like popularity is prophesied for this companion series of ladies' watches.

—Among the prettiest souvenirs of the season received at THE CIRCULAR office was a calendar card from Albert Lorsch & Co., the enterprising importers and jobbers of 37 Maiden Lane. Below the calendar and in imitation of hand painting, was a lantern represented as suspended between two wintry-looking trees, while set in the lantern and apparently shedding a lurid glow, was an imitation rose garnet, a symbol of the specialty in which Albert Lorsch & Co. have pushed to the front.

—During the month of December Rogers & Bro., 16 Cortlandt street, had a veritable blizzard of orders snowed down upon them, and although working their force every night, they were unable to get out the orders quite as fast as they came in. Yet, by incessant work and an enormous stock on hand they have come through the ordeal bravely, and to the entire satisfaction of their numerous customers. Every man in their large establishment exerted himself to the utmost and not only needs but deserves the brief rest and recreation of the holidays and the more remote but longer summer vacation.

—W. H. Eaton, watchmaker, formerly of Andover, Mass., has removed to Methuen, Mass.

—D. N. Brown, of Johnston, N. Y., has sold out his jewelry store, corner Main and Market streets, to Eugene Fairchild, formerly with A. D. Norton, of Gloversville, N. Y.

—M. Hanson, of M. Hanson & Co., Joliet, Ill., bolted for Canada last month leaving his affairs in a very complicated state. The sheriff immediately took possession of the stock he had left behind.

—A traveling salesman for Alfred Eaves, Montreal, Canada, recently lost a trunk containing \$6,000 worth of jewelry, on the Grand Trunk line between Sherbrooke and Waterloo. It was finally recovered after a nine days' search.

—The assignee of Rudolph Brettner, has filed a bond of \$2,000 and will proceed to administer the estate, the attachment obtained by D. L. Van Moppes having been vacated. Brettner's liabilities are \$4,800.35 and his actual assets \$1,338.38.

—Oliver Bros., who failed some months since and were attached by a number of their principal creditors, have brought suit against Henry Dreyfus & Co., for \$25,000 damages alleged to have been sustained by the action of the defendants at the time of the failure.

—The grand jury found eight true bills against Joseph R. Dankworth, the thievish clerk of Keifer & Deschamps, Philadelphia. Five of them charge him with forging checks; two of embezzling \$1,112.45 and \$35, respectively, and one of stealing eighteen diamond rings, valued at \$1,108.67; four pairs of earrings, worth \$451.50; twelve rings, valued at \$595.15, and a pearl ring, worth \$12.

—John C. Dueber is reported to be encountering some difficulties in collecting the \$100,000 bonus which the Board of Trade of Canton, O., guaranteed him if he would remove his factory to that city. Mr. Dueber claims he has carried out his part of the agreement but still the promised bonus is not forthcoming. It is expected that he will commence legal proceedings unless the money is paid by the delinquent subscribers.

—The New York Standard Watch Co. offers a prize of \$100 for the best design for a trade mark, which shall be suggestive of their business, striking in appearance and attractive to the eye. All designs to be submitted on or before the first day of March, 1889, and the award to be made on March 15th, 1889. Further particulars can be had by applying to the New York Office, 83 Nassau street. Their factory is running all departments to its fullest capacity. They have taken on many new finishers but will not be able to turn out movements now ordered before Christmas, and cancellation of some orders will be the result.

—On Saturday evening, December 15th, pedestrians near Thomas Kirkpatrick's store on Broadway near 23d street, were startled by the crash of glass and looking up saw a young fellow put his hand in through the aperture in the window and make off with a valuable diamond necklace. As he had secured the door of the store by a billet of wood those inside were prevented from giving chase until an outsider had released the door, but the detective stationed there made such good use of his legs notwithstanding this handicap that he overhauled the thief. The necklace was recovered. The thief, who gave his name as William Johnson, is not a professional, but b'ds fair to become one.

—The old-time trick of carrying goods to the light under the pretext of examining them has been revived in New York, in one instance at least with success. Charles Boskowitz entered the store of W. A. Barnard & Co., 171 Park Row, recently, and asked to see some diamond earrings. As he was an occasional customer, no hesitancy was shown in placing the goods before him. He asked permission to take three pairs to the light to examine them, and while Mr. Barnard's back was turned, he shouted out that somebody in the street had snatched them out of his hand. He was arrested, but the earrings, valued at \$900, were not recovered. Jewelers should note the revival of this old trick.

—The store of J. C. Sennett, 278 Manhattan avenue, Brooklyn, N. Y., was burglarized on the night of the 14th ult., and about \$3,000 worth of watches and diamonds carried off. The thieves broke through a thin partition from an adjoining office and worked unmolested on the safe.

—We acknowledge with thanks the receipt of a handsome calendar for 1889 from The Sterling Company, silversmiths, of Providence. This company were so busy during the holiday season that for a week before Christmas they kept a stock at their New York office. The factory facilities at Providence, lately largely increased, did not prove sufficient to supply the demand, and they were compelled to run nights for several weeks. The Sterling Company is an enterprising concern.

—Pith is quite an important article in a watch factory. It is used in almost every department and for cleaning polished metal can not be replaced by any other material. Three kinds are in use, alder, burdock and broomcorn, the former two are used but little, the latter very extensively. The Elgin National Watch Company consumes about 3,000 barrels of the stuff annually and that at \$1.00 per barrel is quite an item of expense for such a simple article. Many a watchmaker considers pith an unfailing barometer, and it certainly indicates every change in the condition of the atmosphere. In damp weather it becomes very spongy and hard to use, while in a dry, clear air it is brittle and reliable.—*Every Saturday.*

—The following firms have secured the electric protection of the Metropolitan Burglar Alarm Company for their safes or stores: H. W. Wheeler & Co., Alling & Co., Cottier & Son, A. Luthy & Co., Day & Clark, Kuhn & Doerflinger, Blancard & Co., Ingomar Goldsmith & Co., Ludwig Nissen & Co., Levy, Dreyfus & Co., Henrich & Graves, J. Brunner's Sons, A. Wilkens, William Barthman, Engel-fried, Braun & Weidman, H. Elcox & Co., Kaldenberg & Co., Silas C. Stuart, Shafer & Douglas, E. Aug. Neresheimer & Co., S. Lindenberg, Downing & Keller, H. C. Hardy & Co., Hodenpyl & Sons, M. Myers, John Havg, A. J. Hedges & Co., Sexton Bros. & Washburn, Jacobs & Son, Julien Gallet & Co., Joseph Fahys, Geo. W. Shiebler, V. Jansky, Brooklyn Watch Case Co.

—The French Minister of Commerce, in conjunction with Mons. G. Berger, Directeur-General of the Paris Universal Exposition of 1889, have taken active measures to organize a "Retrospective Exposition of Industrial Work and Anthropological Sciences." M. Berger explains in a recent circular that a large section in the Palace of Liberal Arts has been set aside for this comprehensive collection. He states that this exhibit is already an assured success from the number of applications that have been made to the organizing committee. Attention is called to the fact that although the Exposition will be mainly scientific and technical, it will also in some measure partake of an artistic character, owing to the display of various tools and apparatus to which the workmen of ancient times applied their peculiar ideas of decorative art. Without being a duplication of the "Retrospective Exposition of Art Objects" displayed at the Palace of the Trocadero in 1878, which has since been transferred to the "Musée de Sculpture Comparée," in Paris, the present collection will virtually form a general history of human labor and the diverse applications of manual skill. The general classification will comprise: 1. Anthropological and Ethnographical Sciences. 2. Liberal Arts. 3. Arts and Trades. 4. Means of Transportation. 5. Military Arts. Each of these sections will display objects of all ages and all countries, which will be entered in a special catalogue of this exhibit. All persons who possess objects that would add to the value and interest of this collection, and desire to loan them to the French Government, can obtain additional information from Somerville P. Tuck, U. S. Assistant Commissioner General, No. 1 Broadway, New York City. The French Administration offers to pay the expenses of installation and freight on such objects as they consider worthy of exhibition.

—M. Henry has started in the jewelry business at Monroe, Louisiana.

—Julius Pagelon, formerly connected with Stern & Stern, has opened a store in Denver, Colorado.

—I. Van Ornum has moved from Port Henry, N. Y., to Mantonville, and embarked in the jewelry business there.

—R. Hemsley, successor to J. R. Harper, Montreal, has begun remodeling his new store, and will conduct two stores hereafter.

—A. E. Case, who recently sold out his business at Burwell, Neb., to F. A. Webster, has opened a store in Central City, same State.

—The jobbing firm of Blythe, Lehman & Co., Denver, Col., has been dissolved. Edward Lehman will continue the business alone.

—James Trowsell, formerly of the Trowsell & Russell Jewelry Company, Tuscola, Ill., is now editing the *Escondido Times*, Escondido, Cal.

—We regret to announce the death of Mrs. Thomas W. Adams, wife of Thomas W. Adams, the well known manufacturing jeweler of Newark.

—Hiram Hotchkiss, the oldest jeweler in Buffalo, N. Y., is selling off his stock, and will retire from business. He began business there in 1838.

—F. T. May, who represented Fowler Bros. the past year, has made arrangements to carry the grip for Sexton Bros. & Washburn, 41 Maiden lane.

—On January 1st Henry Jacobson, formerly in the employ of Joseph B. Mayer, of Buffalo, formed a partnership with his brother, who was formerly with W. L. Pollock & Co.

—John W. Jones, for thirty years a prominent jeweler of Milwaukee, Wis., died recently at the age of seventy. C. J. Millman, of Millman & Zinn, same city, is also deceased.

—George L. Streeter, the well-known New Haven jeweler, who has been so seriously ill with an affection of the lungs for over a month, was somewhat improved at last accounts.

—W. C. Edge & Sons, Newark, N. J., are running nights to supply the demand for the popular line of silver and silver and gold novelties which they introduced early this season.

—Otto Stoelker, Montgomery, Ala., has removed from the Exchange corner, where he has been located for the past eighteen years, to his elegant new store at 23 Dexter avenue.

—The factories of the Montreal Watch Case Company and A. Bolt & Co., manufacturing jewelers, were recently destroyed by fire, involving a loss of \$40,000, fully covered by insurance.

—Michael Shea, who was in business for several years at Hot Springs, Ark., but was obliged to give up on account of ill health, died recently at the home of his parents in Paterson, N. J.

—C. C. Penfold, the Buffalo badge maker, who bought the stock and fixtures of the late firm of Ruger & Kimball from Wheeler, Parsons & Hayes, has reopened the store with a complete stock of goods.

—George Gowland, formerly a prosperous retail jeweler of Toronto, Canada, is in the insane asylum through business troubles and the worry of litigation over his father's estate. He has been doing business in his wife's name since 1886.

—The already complicated litigation over the Henry Rowlands assignment had another knot tied in it last month. Assignee Zeller, who was removed by the creditors, applied for reinstatement before Judge Andrews in Supreme Court Chambers. Lawyer Comstock, for the creditors, opposed this, claiming that the preferences given by Mr. Rowlands to Zeller and to the Rowlands estate were fraudulent, and on that account a suit to set aside the assignment altogether was pending. The judge decided that inasmuch as this suit was so soon to be tried, no injury would result to the creditors' interests if the assignee were returned to his duties in the meantime, and he accordingly reinstated him.

—Abraham Limburger, one of the earliest watch importers in this country, and an uncle of Louis and Moses Kahn, of L. and M. Kahn & Co., 10 Maiden Lane, died in New York recently.

—Oliver Gerrish, aged ninety-two years, the oldest jeweler in Maine, died in Portland last month. The retail stores of the city were closed during the funeral as a mark of esteem to the deceased.

—John A. Tichenor, formerly with Durand & Co., has entered into partnership with C. E. Hanson, who has for some time been located at 108 W. 23d street. They will manufacture a line of fine diamond jewelry and diamond mountings, for which Mr. Hanson has already built up a good reputation.

—R. J. Herbert, the genial diamond broker of 176 Broadway, left for Europe on the *Aller*, November 30, to be absent a year or more. After adjourning for a time in Paris and the south of France, he will open a brokerage office in London, continuing his connection with the New York trade through Roberts & Yerrington, 176 Broadway.

—On January 1st the firm of Elbe & Kling, manufacturers of diamond jewelry and importers of diamonds, 44 Maiden lane, was dissolved by limitation of partnership. The relations between the partners have been and are still most amicable, but as they do not desire to renew the contract, each will continue on his own account, after the affairs of the old firm have been liquidated.

—L. Tannenbaum & Co., 65 Nassau street, keep constantly on hand one of the largest and most diverse stocks of diamonds, sapphires, rubies and fancy stones in the market. They are prepared to meet all demands for both staple and special goods. Among the latter is a large quantity of crocidolite, which would find appropriate use in mantels, table tops, ornamental furniture, etc.

—Mr. Frederick C. Manvel, of Ackerman, Bicker & Manvel, clerk of Plymouth Church, Brooklyn, is a frequent contributor to the press on the subject of precious stones. In a recent number of the *Christian Union* was commenced a series of articles from his pen on this fascinating subject, to the literature of which he has given a good deal of study. His lectures given last winter before the Plymouth League treated of the superstitious and romantic or sentimental side of the subject, while in these articles he aims to present the practical or scientific side in a popular style, with as few technicalities as possible.

—On Saturday, December 8th, a trial ascension was made in the air ship of Peter C. Campbell, the Brooklyn jeweler and inventor. Coney Island was the place chosen for the trial, and the day being calm and fair, all was favorable for the ascent. James K. Allen, a professional aeronaut of Providence had charge of the air ship. The balloon is cigar shaped, 60 feet long and 42 feet in diameter in the center. The car and flying machine is suspended from a bar running lengthwise under the balloon. The car is provided with several propellor wheels similar in form to those of steamships, and they are so placed that the aeronaut, working one or more with his hands or feet, may drive the ship ahead, back her, or raise or lower her, provided the air is sufficiently still. She is steered with a rudder at the forward end. There are two oars to facilitate the landing of the ship. The oars have long handles and are in the shape of a fan. Hydrogen gas was used. Mr. Allen first went up 250 feet and then brought the ship back to the spot it started from in order to allow photographs to be taken; he seemed to have no difficulty in doing this. Then he ascended some 500 feet, where the ship remained stationary for a few minutes, and finally, under the guidance of the aeronaut, moved about in different directions. After half an hour of manœuvring, he directed its course to the northeast and descended in the village of Sheepshead bay. He said that in all its movements, with a few minor exceptions, the ship obeyed the actions of the propellers. For over thirty years Mr. Campbell has been hard at work over the problem of aerial navigation, and the trade ought to share his satisfaction in the partial success that has finally rewarded him.

—S. J. Smith, Geneva, Alabama, is dead.

—Geo. E. Cloyes & Co., Watertown, Dakota, have made an assignment, with liabilities reported at \$8,000 and assets at \$4,000.

—M. B. Bryant & Co., 10 Maiden Lane, are offering special bargains in initial rings, which they are prepared to furnish within from 24 to 48 hours after the receipt of the order.

—Among the handsomest holiday souvenirs that came under our notice, were those issued by George H. Ford, of New Haven, and J. H. Johnston, of Union Square, New York.

—The Rockford Watch Co. are away behind on their orders. They are putting in new machinery and increasing their force, and hope to double their production by the 15th of January.

—The judgment of \$20,000 given about a year ago by T. P. Bedilion, of Pittsburg, in favor of his wife, was set aside recently by a number of his creditors and a number of claims were allowed in judgment.

—John Wanamaker, the Philadelphia merchant, displays in his establishment a crown that once formed a part of the "Crown Jewels" of France and was worn by the Empress Eugenie. It is valued at \$75,000.

—Ex-Postmaster Fleury, of Paso del Norte, Texas, and T. O. Farrel, his deputy, who were charged with the robbery of \$100,000 worth of diamonds from the mails last February, were convicted recently and sentenced to fifteen years' imprisonment.

—Last month an expert diamond thief passed through the prominent cities of the middle states, en route east, calling on the jewelers and plying his trade with success in many instances. Cleveland, Buffalo, Rochester and Albany took the stranger in and were taken in by him.

—One of the oldest and most reliable makers of church, chime-and-quarter clocks, railway and marine levers and tower clocks is the firm of W. F. Evans & Sons (Soho Clock Factory), Birmingham, England. One of their latest novelties, a "grandfather clock," is illustrated on another page.

—Crossin & Tucker think that competition is the life of trade in general, and of their own trade in particular, so they are on deck in season with a brand new line of novelties that must be seen to be appreciated. Mr. Crossin will make his usual New Year calls on the jobbing trade, and who more welcome than he?

—Thomas D. Winchester, formerly proprietor of the old Western Hotel in Cortlandt street, where the eastern manufacturers made their headquarters thirty years ago, died suddenly last month in the Ninety-ninth street Hospital, New York. He was widely known among the older members of the trade and much liked for his genial qualities.

—The offer of fifty cents on the dollar made by Roth & Son, Los Angeles, Cal., has been accepted by the creditors of the bankrupt firm, and Roth & Son will soon reopen with a new stock at the corner of First and Spring streets. The settlement was strenuously opposed by the local retailers, and threats of boycotting those that accepted it were made. The old stock is being sold at auction.

—Queen & Co., the Philadelphia opticians, have an improvement for eye-glasses called the "Grecian" spring. It is curved gracefully from the plane of the glasses, conforming to the shape of the brow and permitting the lenses to be brought closer to the eyes, as is the case with spectacles. The regular form of glass is used, and the spring can therefore be adapted to any eye-glass without altering the frame.

—Thomas Steele, the quondam jeweler of Hartford, now artist and litterateur, has two very handsome fish pieces on exhibition at the gallery of Williams & Everett, Boston, Mass.. Mr. Steele himself is an expert angler, and an enthusiast at the sport and his artistic delineations of his favorite pastime partake of that zest which is born of love. Between rod and fly and pallet and brush Mr. Steele's time is happily spent.

—The annual meeting of the National Association of Jobbers in American Watches will occur on January 15, in the Mutual Life Insurance Building, No. 34 Nassau street.

—Wade, Davis & Co.'s new line, consisting of bracelets of all kinds, coils, Success and garnet, brooches, lace pins, studs, cuff pins and jersey pins, is now ready for the market. Charles A. Whiting, their representative, has a full line of samples at their New York office, Dennison Building, 198 Broadway. Their new garnet and turquoise bracelet is likely to prove one of the hits of the season. All orders are filled at the factory in Plainville.

—Mr. George F. Kunz appears in the December *Art Amateur* in an exhaustive interview on "Art Works in Jade and other Hard Stones," giving a description of this rare mineral, its localities, interesting archaeological information connected with it, methods of working and a brief mention of some of the chief collections in this and other countries. Cuts of some of the rarest of these art objects supplement the descriptions. The interview is to be continued next month.

—D. F. Foley & Co., gold pen makers, have brought suit for slander against John Foley, of gold pen and political fame, claiming that the latter published in the daily papers a notice to the effect that "two concerns, presumably unable to sell pens of their own manufacture, are making and attempting to sell gold pens claimed by them to be Foley's gold pens." D. F. Foley & Co., are selling pens under their own name and regard this as a slanderous attack.

—The committee of the Chamber of Commerce, of Rochester, N. Y., which was appointed to investigate the proposed plan for a watch factory in that city, have prepared and circulated a prospectus for a company with \$500,000 capital stock, divided into 5,000 shares of \$100 each, no part to be called for until \$350,000 has been subscribed. The committee are sanguine of success, but it is their advice to go "wise and slow," and thus avoid the rocks on which so many other ambitious watch factory schemes have made shipwreck.

—Foster & Bailey announce "Six Big Lines" of their popular goods for the coming season. Four hundred thousand pairs of the Mount Hope button were sold last year, but notwithstanding this successful showing, they are in the market again with a new button, "The Omega," the *ne plus ultra* of button making. "The Omega" has a round shoe that moves from center to side to admit the button into the cuff, after which the front is turned half round to bring the post into the center of the shoe. These goods are handled by the jobbing trade only, and orders should be placed early, as Foster & Bailey's popular line goes off like hot cakes.

—Anthony Hessels, who some months ago opened a retail store at No. 330 Fifth avenue, made an assignment on December 14 to Franklin Bien. The liabilities are \$67,000 and the actual assets \$71,000. Mr. Hessels was for some years a member of the firm of Hessels & Ludeke, 21 John street, which dissolved in 1884, Mr. Hessels retiring. He then engaged in the diamond cutting and polishing business at 52 John street, using a process of his own, moving thence to open the retail store on Fifth avenue. Business in his new quarters has not been a success. Assignee Bien is confident that if given time he will be able to pay 100 cents on the dollar.

—Daniel J. Welch, a 17 year old clerk in the employ of Jos. D. Lynch, 1123 Broadway, is under arrest, charged with the theft of nearly \$7,000 worth of diamonds and jewelry from his employer, the proceeds of which he spent in gaming, racing and other pleasures. Mr. Lynch missed articles from time to time, but did not suspect the lad until he discharged him for his irregular habits, and called in detectives to assist in tracing the thefts, which he believed to be the work of shoplifters. The detectives discovered that the discharged employee was the culprit, and decoyed him to the store where a full confession was obtained from him. At Welch's lodging several thousand dollars worth of jewelry and precious stones were found in a trunk. The boy had disposed of a large share of his plunder to various pawnbrokers in the city, whose names he gave to the detectives. He had previously borne a good reputation.

—G. Philbrick has opened a new store in Skowhegan, Me.

—H. L. Rickey opened a new store in Trenton, N. J., just previous to the holidays.

—Francis Lemon, of Aledo, Iowa, has just opened up an elegant jewelry store in that town.

—S. O. Merrill, Nashville, Tenn., who recently failed, has removed to new quarters in the Y. M. C. A. building.

—French's jewelry store, Wabash, Ind., was burglarized recently. Forty watches and considerable money were taken.

—Lord Bros.' new store at Milwaukee, Wis., is described as a very worthy addition to the jewelry stores of that flourishing city.

—C. L. Merry, formerly of Norwalk, O., is now behind the counter at the Cowell & Hubbard Jewelry Co.'s busy establishment, Cleveland, O.

—Among the tenants of the new Corbin building, corner of John street, will be the Illinois Watch Co., who have engaged offices on the fifth floor.

—The bankrupt stock of C. M. Piccard, Dayton, O., was sold at auction last month for \$7,205, the buyer being an out-of-town party supposed to represent Piccard.

—Miller & Leavitt, Trenton, N. J., gave up business on January 1st. Mr. Miller has accepted the position of watch inspector for the Philadelphia and Reading Railroad Co.

—Ayers & Son, of Keokuk, Ia., have procured a writ of attachment against Tower & Co., of Des Moines, Ia. The firm claim assets sufficient to cover all indebtedness.

—The E. N. Welch Manufacturing Co.'s display of clocks this season is very fine, and we are pleased to hear that the company is satisfied with the manner in which the trade appreciates their efforts.

—Charles F. Fisher, one of the oldest watchmakers of Texas, and an honored resident of San Antonio, died recently, aged 81. He started in business there in 1846 and had served in the City Council several times.

—Koch & Dreyfus, the New Orleans jobbers, have finally decided to remove to New York. Mr. Koch will visit the metropolis early in 1889 to select a location, but the change will not be made before May or June.

—O. Schwenke, of No. 8 John street, for the last twenty years has made a specialty of manufacturing hair jewelry in the greatest variety of patterns, and can be thoroughly depended upon for promptness and fair dealing.

—The case of John Foley against D. F. Foley & Co. and John Foley, Jr., for alleged infringement of trade mark, was dismissed with costs in favor of the defendants, by the Supreme Court on the 12th of December, the plaintiff having failed to proceed with the case at the stipulated time.

—For the information of any of our readers who may be interested, we would state that the accident insurance company which was recently placed in the hands of a receiver, was the United States Mutual Accident Relief Company, of Massachusetts, and not the United States Mutual Accident Association, of New York.

—B. and W. B. Smith, the manufacturers of artistic store fixtures, 220 West 29th street, New York, have an improvement in show cases that jewelers will appreciate the value of. They have succeeded in producing a counter case of quarter inch plate, just as strong and even stronger than the old heavy molded style, with a bar or molding only one-half to five-eighths of an inch in thickness. This makes a far handsomer case in appearance and offers little or no obstruction to the view. Smaller cases are made with even narrower bars. Another decided improvement in their counter cases is the vertical sliding-doors which render the cases perfectly air-tight and unlike the old hinge doors are never in the way. B. and W. B. Smith are now engaged on a number of examples of their handiwork for the Paris Exposition, where merit like theirs is sure to be recognized.

—The bankrupt stock of J. M. Chandler, Cleveland, O., has been sold to J. A. Conrad for two-thirds of its appraised value, which was \$22,000, and Mr. Chandler will resume charge of the business. His latest offer of forty cents has been accepted by the majority of the creditors and will likely be accepted by the remainder.

—James D. Harrington, Rochester, N. Y., who conducted two places of business, one 112 and 114 State street, and the other 62 East Main street, made a general assignment December 20 to Charles H. Yost. The only preferred creditor is Frank D. Enney, of Syracuse, whose claims on the assignor are five promissory notes, aggregating \$1,034.40, given in payment for goods.

—A New York concern is making a very elaborate sacred vestment, called the remonstrance, for a Catholic church in Pittsburg. A leading member of the church died recently and left a valuable collection of precious stones for this purpose, as well as the money necessary to buy the gold and silver used in making the remonstrance. The sacred article named is used in connection with the ceremony of the Benediction of the Blessed Sacrament so frequently performed in the Catholic church, the sacred host being placed in the remonstrance while exposed to view on the altar.

—Meyer Friede, President of the M. Eisenstadt Jewelry Company, St. Louis, Mo., died December 7 after a brief illness at the age of 67. Mr. Friede was born near Cassel, Germany, and learned the bookbinders trade. In 1838 he came to America, and after living six years in the South, went to St. Louis to engage in business with his brother-in-law, L. Bauman. At the end of six years he went into business for himself. In 1859 he was elected to the Legislature on the Republican ticket by a large majority, and subsequently filled other public offices of trust. He returned to the trade in 1883, forming with Morris Eisenstadt, E. Achard and Ben. I. Altheimer, the M. Eisenstadt Jewelry Co., of which he remained President up to the time of his death.

—Albert Berger & Co., in addition to their immense manufactory of watch glasses (W. B. & Co.) and lenses, have ready for the trade a full line of gold and silver spectacles and eye-glass frames, thus completing the whole range of goods demanded by either the optical or jewelry business, in so far as this line of business legitimately extends. For the jobber this must be a welcome addition to the stock of this enterprising firm, who have also a large line of bronzes and French clocks. Buyers are requested to notice that Berger & Co. are direct importers of goods of their own manufacture only. Their establishment in New York City dates from 1829, and Walter, Berger & Co., who were the direct predecessors of the firm, began business in 1721, as manufacturers of the watch glasses and lenses which are now known and appreciated over the whole civilized world.

—The "Equitable Jewelry Company" is the somewhat malapropos title of a new concern incorporated under the laws of the State of New York to do business in New York City. The incorporators are Philip Babcock, Mrs. A. L. Bamber and William Bamber, relatives of William H. Payne, the offending member of the late firm of Payne, Steck & Co., of unpleasant memory, and the capital stock is \$5,000. The above named persons are also trustees for the ensuing year, with Mrs. A. L. Bamber, president, and William H. Payne, secretary and treasurer. Payne, it will be remembered, is now under indictment by the grand jury for grand larceny, but he is likely to have a chance to re-establish his credit before the action is brought to trial. The Equitable Jewelry Co. will start up at once with the avowed intention of paying off Payne's old debts and regaining the confidence of the trade. The proceeds of the sale of the stock of the late firm are now in the sheriff's hands awaiting decision in the suits brought by certain creditors to set aside the judgments confessed to relatives.

—The American Watch Tool Company, of Waltham, Mass., are making extensive preparations for the year 1889. The past season has been a very successful one with them, but they are not the kind to rest content with past successes. The sales of the well-known Whitcomb lathe, are on the increase, and they have just shipped their 5,000th lathe. To give some adequate idea, however, of the amount of business they do outside of this specialty, it may be stated that since the concern was organized about twelve years ago they have furnished to American and foreign watch and clock companies, nearly \$300,000 worth of tools and machinery. One of the best monuments of their skill is the factory of the Waterbury Watch Co., which Mr. Webster designed and equipped to turn out 1,000 watches a day. Mr. Webster's long experience in the field of practical watch manufacture has well fitted him for this work. He is thoroughly familiar with the old and ever on the alert for new ideas. Those who are in need of any equipment in this line will consult their own interests by corresponding with the American Watch Tool Co.

—G. H. Loehr, manufacturing jeweler, of Chicago, made an assignment on December 22, with liabilities estimated at \$5,000.

—A. C. Titcomb, the genial San Francisco jeweler, has been re-elected mayor of Newburyport, Mass., his native city, where he has resided since he gave up business in San Francisco.

—E. H. Ackley, for the past year with J. H. Davis & Co., Philadelphia, and formerly with Geoffroy & Co., has made arrangements to represent Unger Bros. on the road for the coming year.

—The Chas. D. Pratt Co., 33 Chambers street, are offering great bargains to close out their stock for the season. Among their specialties are a great variety of desirable patterns in onyx clocks which they are now closing out at very low figures.

W. F. Doll, the enterprising wholesale jeweler, of Winnipeg, Manitoba, has our thanks for a very faithful likeness of that grand old man, the Hon. William Ewart Gladstone, which he is sending to his customers with the compliments of the season.

—W. F. Cory, who for the past three years has occupied the position of eastern manager for the Illinois Watch Company, has resigned, and with A. W. Osmun, for the past eight years with Unger Bros., will at once commence the manufacture of fine gold and silver jewelry at No. 27 Marshall street, Newark, N. J.

—The Sterling Company, of Providence, never do things by halves, and when they send round a souvenir something choice is to be expected. In this we were not disappointed this year, for the little reminder that bore their greetings for 1889 was a work of art in every respect, worthy of a prominent place among the numerous souvenirs issued by the trade.

—William Senter, of William Senter & Co., Portland, Maine, died on the 22d of December from injuries received by being thrown from his carriage some months ago. He was one of the most prominent jewelers of New England and had filled acceptably the mayoralty chair of the city of Portland, where he had been engaged in the jewelry business for many years. His age was 75. The business will probably be continued by his son.

—David and Moses Bruhl retired from the firm of D. & M. Bruhl January 1. The business will be continued by the sons, Paul and Henri Bruhl, and Samuel Sondheim, Louis Lilienthal and Salomon Bass, under the style of Bruhl Bros. & Co. The offices in New York, Paris, Providence, San Francisco and Yokohama will all be continued as heretofore. Paul and Henri Bruhl will remain in Paris, Messrs. Lilienthal and Bass will superintend the New York house, and Mr. Sondheim will attend to the Japan branch.

—Robert H. Ingersoll & Bro., 45 Fulton street, New York, have a little novelty in the form of a key ring that is finding considerable sale among the jewelry trade. It is called the "Security Puzzle Key Ring," and is so constructed that when compressed a clasp is released and the ring may be readily opened. The clasp is replaced by the same operation, the ring expanding and effectually locking it in place. When closed there is no clue as to the way of access, and in this respect it is a pleasing puzzle. The rings are made in German or solid coin silver, and in connection with them they also make a safety key chain in three grades—steel, German silver and solid coin silver, which can be attached to the trousers button and carried either in the side or rear pocket, the length of the chain admitting of the convenient use of the keys. The rings are put up in dozens, and the reasonable prices at which they are sold will insure a good demand among the jewelers' customers.

DESCRIPTION OF A MODEL FACTORY.

The head office and works of Howard & Son and the Sterling Company, owned and controlled by them, occupy the entire third floor of the Enterprise Building, No. 3 to 13 Eddy street, and the Allen Greene Building, directly at the rear of the Enterprise, and running through from Fountain to Worcester streets. Although occupying a great amount of space in both of these large buildings, Howard & Son have taken for the business address of both firms No. 7 Eddy street, which is brief and readily understood. The frontage of the works on Eddy street is about 125 feet, and the building runs back nearly 150 feet on Fountain and Worcester streets, the full space occupied being nearly 15,000 square feet, all on one level. The entrance to the business offices is at No. 7 Eddy street, and they are reached by a passenger elevator which runs constantly from 7 A. M. to 6 P. M. There are side entrances for the operatives on Fountain and Worcester streets. On entering the premises the first room encountered is the principal business office, a spacious room measuring 31x20 feet, finished in natural cherry, with desks, counters and general office furniture in harmony with the tints of

this beautiful wood. At the rear of this office is the shipping room 22x19 feet, getting its air and light from the shaft in the center of the Enterprise Building. This room is furnished with all conveniences and facilities for packing and shipping goods, and is finished in light tints. Opening out of the main office in the center of the front of the building is the private office of the members of the firm, adjoining which is the order room of the plated department, 55 feet in length and 20 feet in width. This order room is also reached from the main office by a separate passageway. Next the order room is the office of the superintendent of the plated department, side by side with an apartment occupied by engravers and chasers. The remainder of the south or Worcester street side of the two buildings is devoted to the works of the plated department, and comprises the main work room, machine shop and tool room, polishing room, coloring room and store room. The different departments in the plated works have been kept distinctly separate, and everything has been arranged with a view to economy of time and expense. Returning to the main office before mentioned, the first room met on the right or north side is the office of the superintendent of the Sterling Company, which branch of the business is devoted entirely to the production of novelties and jewelry in sterling silver. Adjoining the superintendent's office is the order room of this department, which, on account of its valuable contents, is protected by the automatic burglar alarm system. Next to this is a room occupied by chasers, etchers, engravers and decorators. Beyond this is an enclosed space reserved for the foreman of the Sterling Company's works. The remainder of the building on the north or Fountain street side, is occupied by the works of the Sterling Company, and comprises the main workroom, coloring room and storeroom. It will readily be seen from as meagre a summary as has been given, that Howard & Son have made many improvements in their removal to the new quarters, not the least of which is having the offices and works entirely on one level, commanded by their main office from a central position. Many manufacturers of plated goods who have visited the factory during the past month pronounce it the model one of the country. Carpenters, painters, plumbers, machinists and mechanics of all kinds have been busily engaged in fitting up since the first of September, but the firm is at last able and glad to announce to their customers in both lines, that they are prepared for the transaction of a largely increased business.

—At a recent meeting of the Board of Trustees of the Non-Magnetic Watch Co. of America, held at their offices, 177 and 179 Broadway, New York City, E. T. Gilliland was elected Treasurer, C. P. Bruch, Secretary, and A. C. Smith, General Selling Agent for the company. Mr. Gilliland is widely known in electrical circles as an inventor of telephone apparatus. He was the first President of the Gilliland Electrical Works at Indianapolis and was for years a director of the Western Electric Co., with offices in Chicago, Antwerp and London. As the telephone developed he entered extensively into the business, and became President of the Missouri and Kansas Telephone Co. at Kansas City. He was for many years superintendent of the mechanical department of the American Bell Telephone Co., and was sent to Europe to establish factories there for the manufacture of the Bell telephone apparatus. He had the first factory for the manufacture of telephonic apparatus west of the Allegheny Mountains. In the fall of 1885 he became interested with Thomas A. Edison, and was the chief promoter of the Edison phonograph. He is a man of large means, of fine executive, mechanical and inventive ability, and one of the foremost men in electrical circles. C. P. Bruch has for many years been connected with the Western Union Telegraph Co., and resigned the secretaryship of the Telegraphers' Mutual Benefit Association to accept the new position to which he has been elected. Mr. Bruch is actively connected with the Serial Building Loan and Savings Institution, being one of its Board of Managers, and was a member of the Executive Committee of the Telegraphers' Aid Society for two years. Aside from his connection with telegraphic societies, he is an active member of the Ohio Society of New York, and President of the Magnetic Club, the most popular social organization ever established by the fraternity of the metropolis. The Non-Magnetic Watch Co. are to be congratulated on their good fortune in securing the association of these two gentlemen, whose experience, ability and business acquaintance so well qualify them for the positions they have been elected to fill. As regards Mr. Smith, no man in the watch business probably has so large a personal acquaintance in the different branches of the trade, and his early training as a practical watchmaker, together with his large experience in watch manufacturing and the handling of the market, especially fits him for the enterprise in which he is engaged. His broad and liberal policy, energy and good judgment have contributed very much to the success of the company.

Monogram Designs.—Plate 24.

RENAISSANCE

LOUIS XV

FLORENTIN

FLORENTIN

MODERNE

MODERNE



IM



IN



IO



IP



IQ



IR



IS



IT

Monogram Designs.—Plate 25.

RENAISSANCE

LOUIS XV

FLORENTIN

FLORENTIN

MODERNE

MODERNE



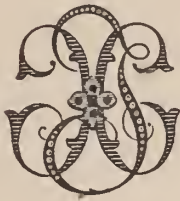
IU



IV



IW



IX



IY



IZ



JJ



JK

Monogram Designs.—Plate 26.

RENAISSANCE

LOUIS XV

FLORENTIN

FLORENTIN

MODERNE

MODERNE



J L



J M



J N



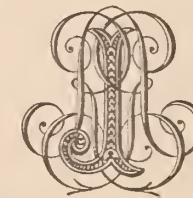
J O



J P



J Q

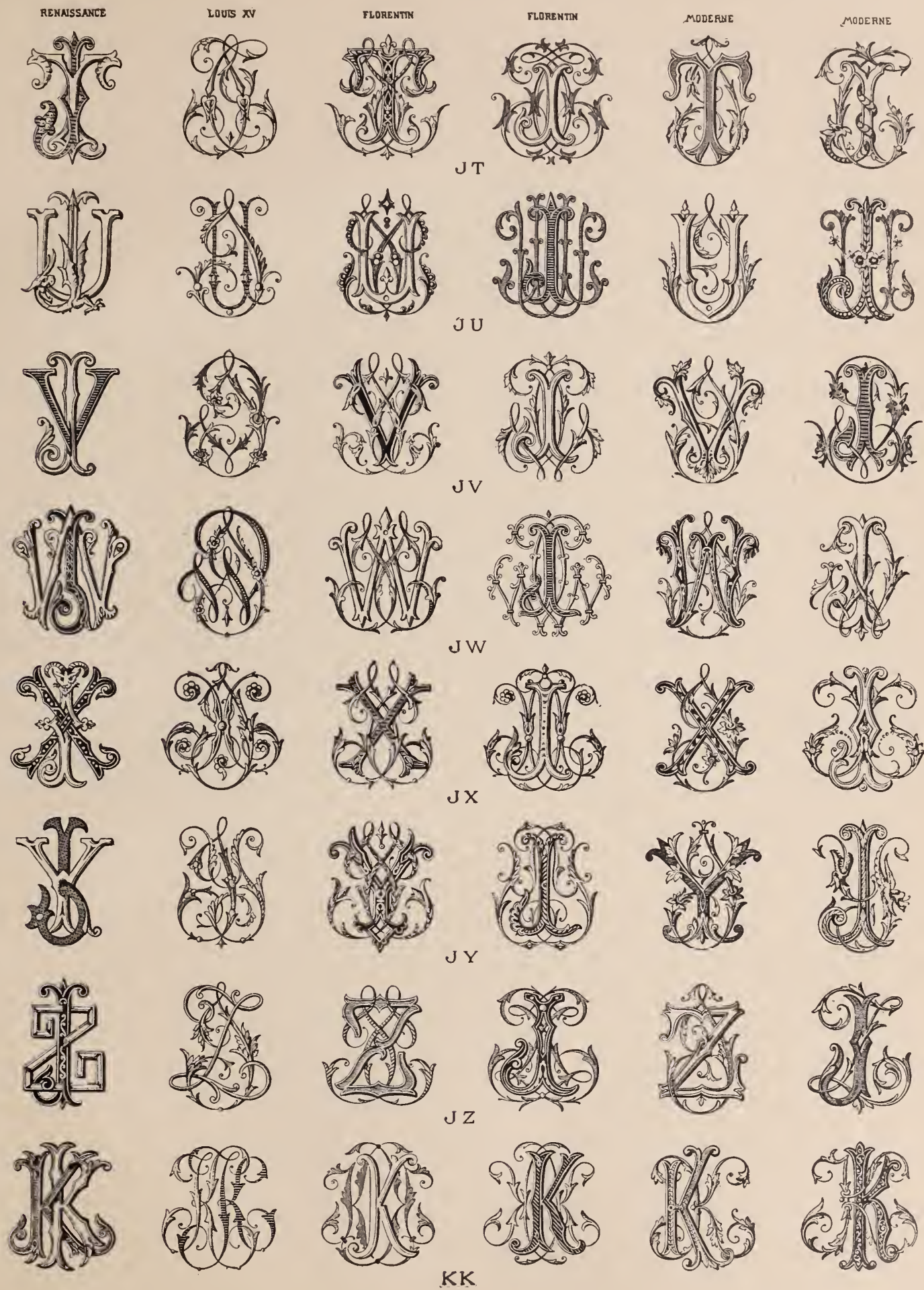


J R



J S

Monogram Designs.—Plate 27.



Monogram Designs.—Plate 28.

RENAISSANCE

LOUIS XV

FLORENTIN

FLORENTIN

MODERNE

MODERNE



KL



KM



KN



KO



KP



KQ



KR



KS

Monogram Designs.—Plate 29.

RENAISSANCE

LOUIS XV

FLORENTIN

FLORENTIN

MODERNE

MODERNE



K T



K U



K V



K W



K X



K Y



K Z



L L

Monogram Designs.—Plate 30.

RENAISSANCE

LOUIS XV

FLORENTIN

FLORENTIN

MODERNE

MODERNE



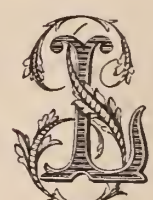
L M



L N



L O



L P



L Q



L R



L S



L T

Monogram Designs.—Plate 31.

RENAISSANCE

LOUIS XV

FLORENTIN

FLORENTIN

MODERNE

MODERNE



LU



LV



LW



LX



LY



LZ



MM



MN

Monogram Designs.—Plate 32.

RENAISSANCE

LOUIS XV

FLORENTIN

FLORENTIN

MODERNE

MODERNE



MO



MP



MQ



MR



MS



MT



MU



MV



Monogram Designs.—Plate 33.

RENAISSANCE

LOUIS XV

FLORENTIN

FLORENTIN

MODERNE

MODERNE



MW



MX



MY



MZ



NN



NO



NP



NQ

Monogram Designs.—Plate 34.

RENAISSANCE

LOUIS XV

FLORENTIN

FLORENTIN

MODERNE

MODERNE



NR



NS



NT



NU



NV



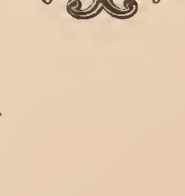
NW



NX



NY



Monogram Designs.—Plate 35.

RENAISSANCE

LOUIS XV

FLORENTIN

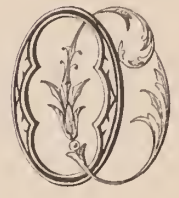
FLORENTIN

MODERNE

MODERNE



N Z



O O



O P



O O



O R



O S



O T



O U

Monogram Designs.—Plate 36.

RENAISSANCE

LOUIS XV

FLORENTIN

FLORENTIN

MODERNE

MODERNE



OV



OW



OX



OY



OZ



PP

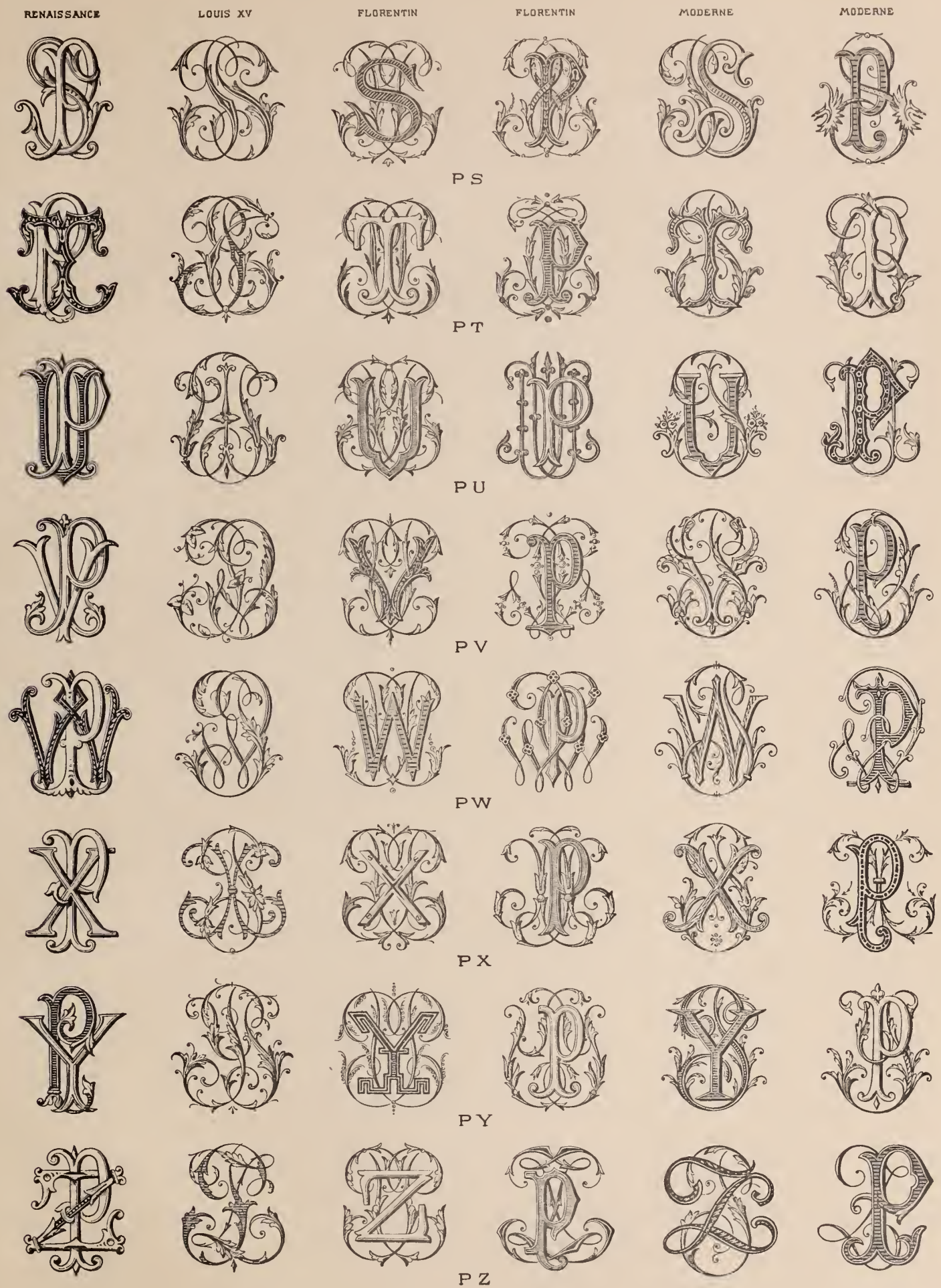


PQ



PR

Monogram Designs.—Plate 37.



Monogram Designs.—Plate 38.

RENAISSANCE

LOUIS XV

FLORENTIN

FLORENTIN

MODERNE

MODERNE



Q Q



Q R



Q S



Q T

RENAISSANCE

LOUIS XV

FLORENTIN

FLORENTIN

MODERNE

MODERNE



Q U



Q V

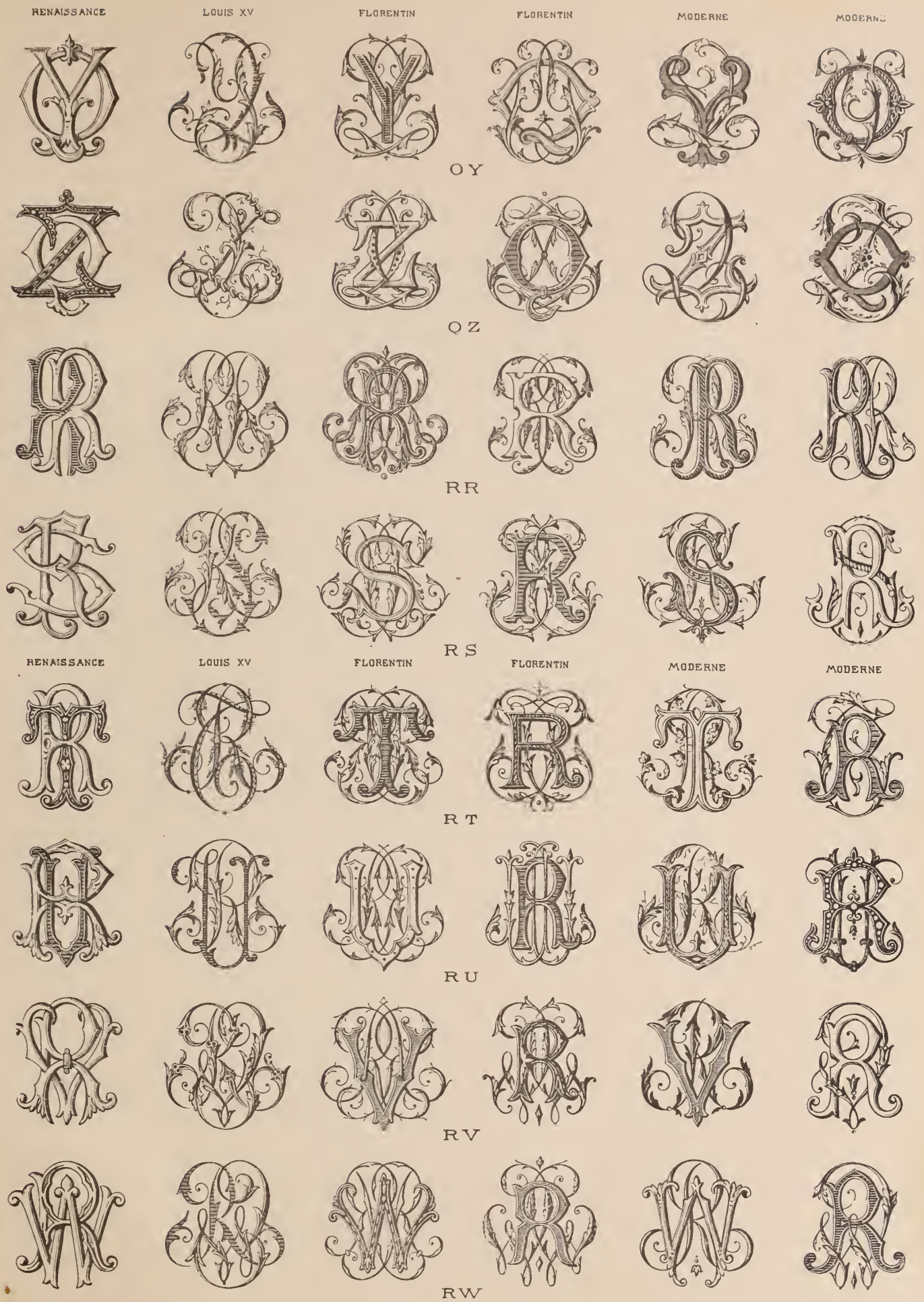


Q W



Q X

Monogram Designs.—Plate 39.



Monogram Designs.—Plate 40.

RENAISSANCE

LOUIS XV

FLORENTIN

FLORENTIN

MODERNE

MODERNE



R X



R Y



R Z



S S

RENAISSANCE

LOUIS XV

FLORENTIN

FLORENTIN

MODERNE

MODERNE



S T



S U

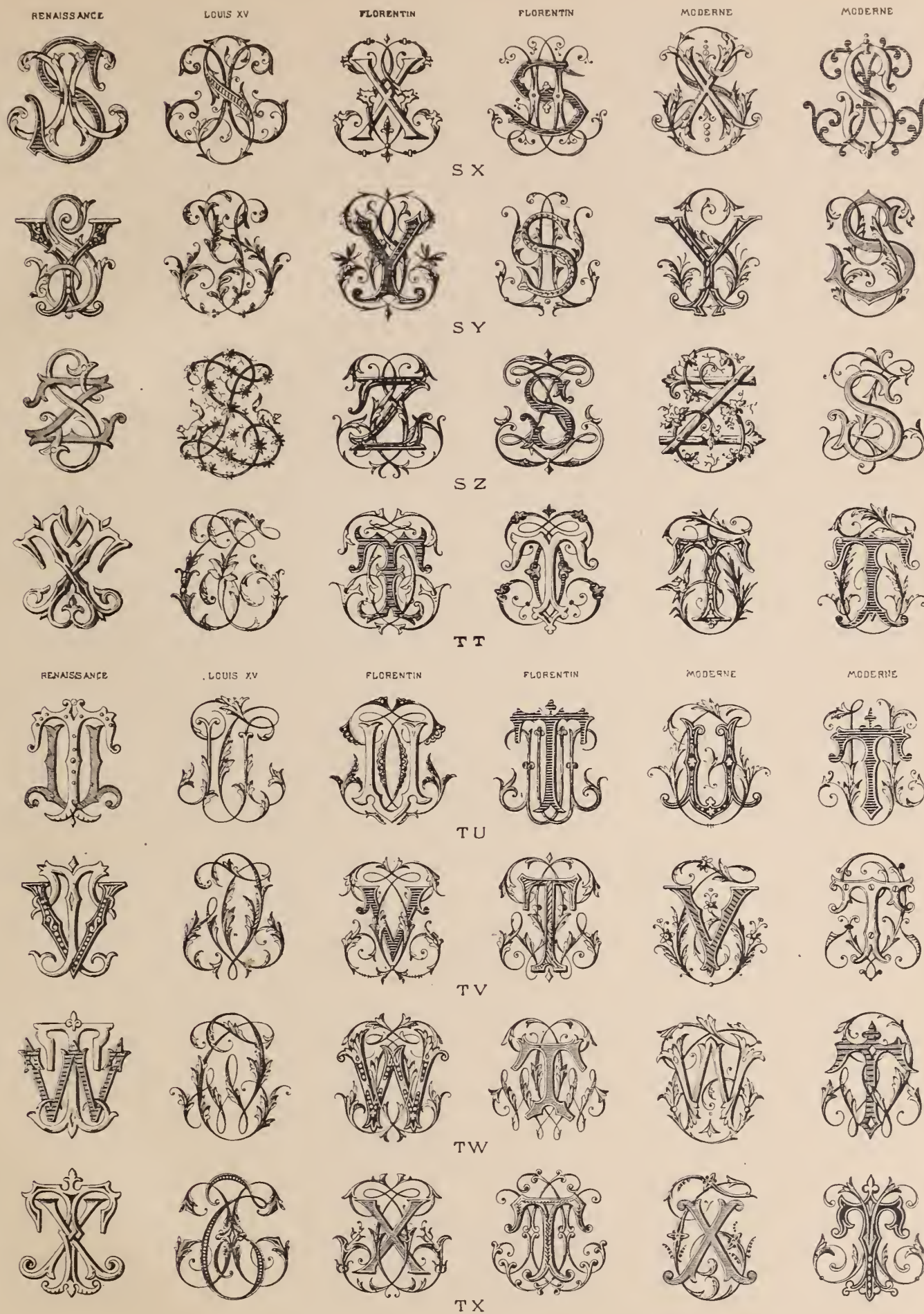


S V

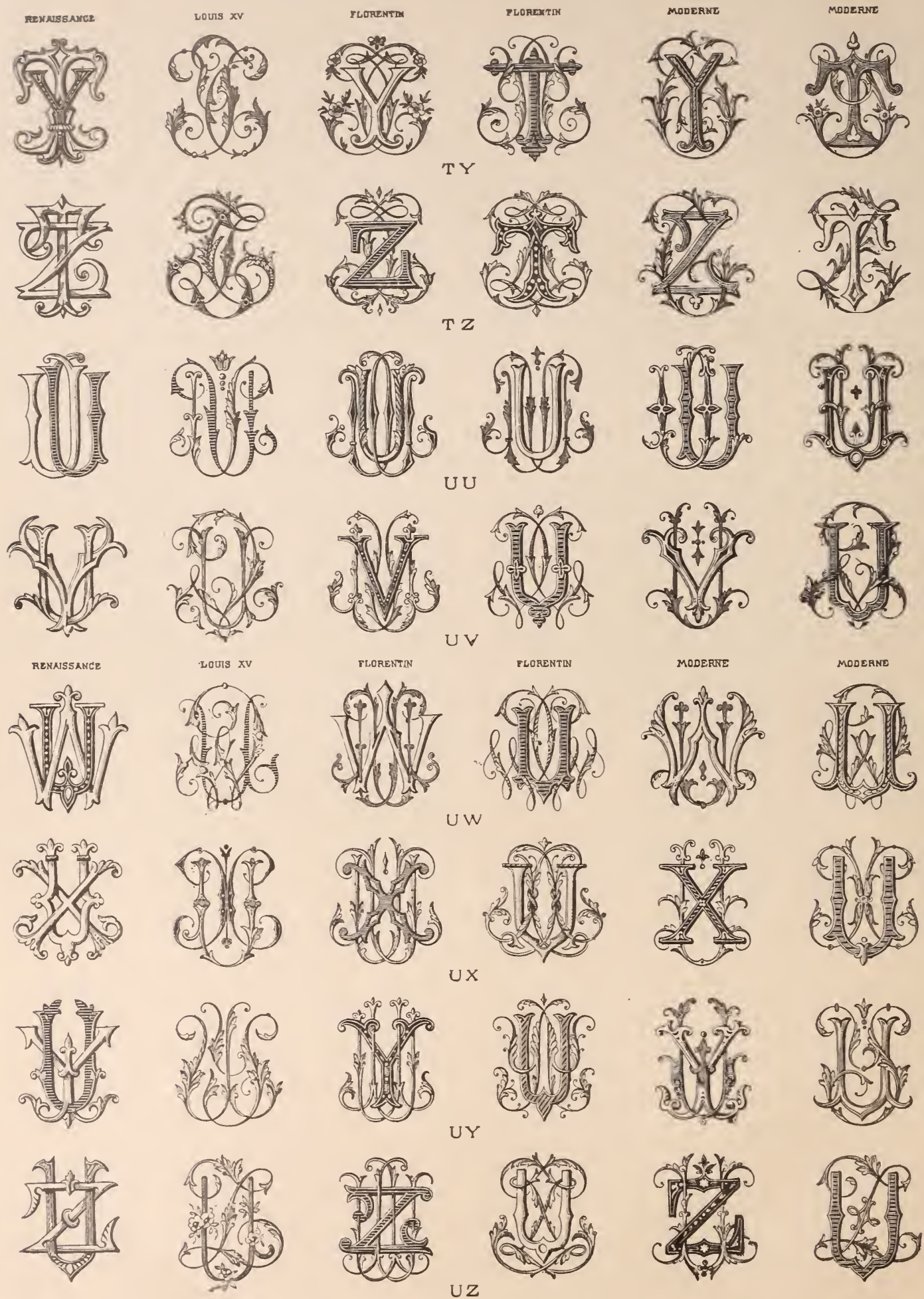


S W

Monogram Designs.—Plate 41.



Monogram Designs.—Plate 42.



Monogram Designs.—Plate 43.

RENAISSANCE



LOUIS XV



FLORENTIN



FLORENTIN'



MODERNE



MODERNE



VV



VW



VX



VY

RENAISSANCE



LOUIS XV



FLORENTIN



FLORENTIN'



MODERNE



MODERNE



VZ



WW



WX



WY

Monogram Designs.—Plate 44.

RENAISSANCE



LOUIS XV



FLORENTIN



FLORENTIN



MODERNE



MODERNE



W Z



X X



X Y



X Z

RENAISSANCE



LOUIS XV



FLORENTIN



FLORENTIN



MODERNE



MODERNE



Y Y



Y Z



Z Z

FOUGEADOIRE



EUGENIE



MARTHE



CHARLOTTE



ADOLPHE



HIPPOLYTE



